



United States
Department of
Agriculture



NRCS

Natural
Resources
Conservation
Service

In cooperation with
South Carolina Agricultural
Experiment Station and
South Carolina
Department of Natural
Resources, Land, Water
and Conservation Division

Soil Survey of Bamberg County, South Carolina



How To Use This Soil Survey

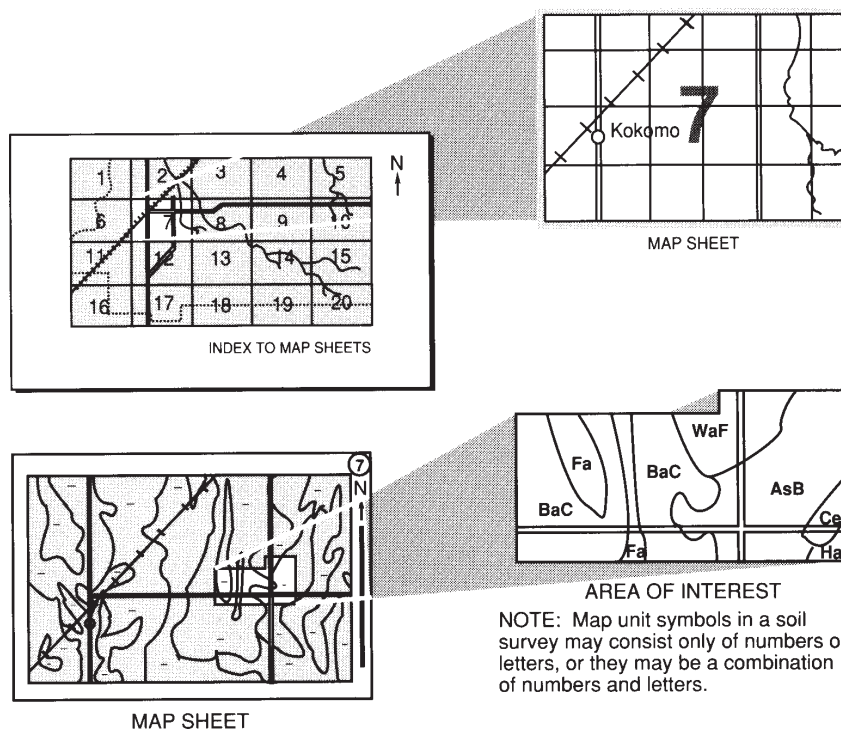
Detailed Soil Maps

The [detailed soil maps](#) can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the [Index to Map Sheets](#). Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the [Contents](#), which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service; the South Carolina Agricultural Experiment Station; and the South Carolina Department of Natural Resources, Land, Water and Conservation Division. The survey is part of the technical assistance furnished to the Bamberg Soil and Water Conservation District.

Major fieldwork for this soil survey was completed in 1996. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1996. The most current official data are available on the Internet at <http://websoilsurvey.nrcs.usda.gov/app/>.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover Caption

Hayland and farm pond on Nankin loamy sand, 6 to 10 percent slopes, near Govan in western Bamberg County.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov>.

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Issued 2007

Foreword

This soil survey contains information that affects land use planning in Bamberg County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various decisions for land use or land treatment. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of Bamberg County, South Carolina

By Dr. Lee Norfleet, Natural Resources Conservation Service

Fieldwork by Dr. Lee Norfleet, Lance Brewington, and Robert Eppinette,
Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
South Carolina Agricultural Experiment Station and South Carolina Department of
Natural Resources, Land, Water and Conservation Division

BAMBERG COUNTY is located in the southwestern part of South Carolina in the upper and middle Coastal Plain ([fig. 1](#)). It has an area of 252,619 acres, or about 395 square miles. The land is gently sloping or undulating and ranges in elevation from 100 to 270 feet above sea level. The higher areas are along the western boundary, and the land slopes gradually to the southeast. Many egg-shaped, swampy depressions called bays occur in the central part of the county and extend in a northeast-to-southwest direction. These bays vary in size from a few acres to more than a square mile. The large end of the egg-shaped bays faces northwest, and the small end faces southeast.

Before the survey area was settled, it was covered by a vast forest. Pine and hardwood trees grew on the uplands, and cypress and gum grew in the swamps. Today, the upland forest consists dominantly of loblolly pine and longleaf pine and includes a few oaks, hickory, persimmon, beech, and dogwood. In the swamps, cypress and blackgum are the dominant trees. The moist soils support hickory, loblolly pine, slash pine, blackgum, sweetgum, holly, live oak, and water oak. Pine, blackgum,

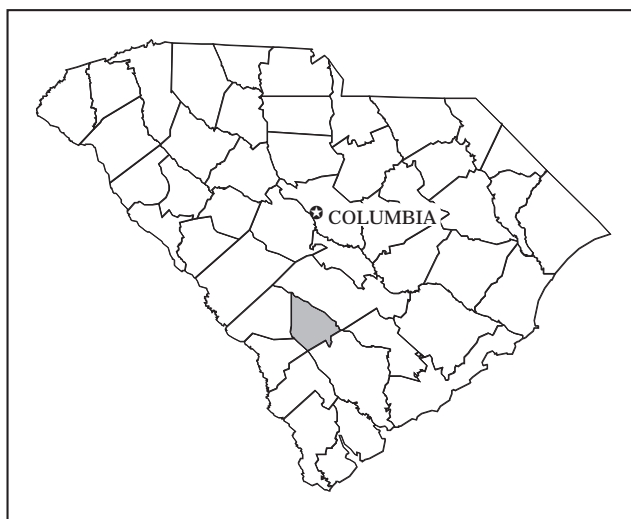


Figure 1.—Location of Bamberg County in South Carolina.

and alder grow in the low, wet, sandy areas. The higher, sandy areas support longleaf pine and slash pine and some loblolly pine, blackjack oak, and turkey oak. Most areas have an undergrowth of brush, vines, and shrubs.

Many kinds of soils occur in Bamberg County. These soils range from dry to wet. Texture of the surface soil ranges from sand to clay loam, but the dominant soils are loamy sand to sandy loam. The soils developed from marine deposits consisting of beds of sand and sandy clay. In much of the county, marl underlies the marine deposits. Different soils are on uplands, on stream terraces, on first bottoms, and in small areas of local alluvium. Because of heavy rainfall, the soils have been severely leached of plant nutrients and contain a medium to very small amount of organic matter. They are moderately acid or strongly acid.

Bamberg County is primarily agricultural. The chief crops are cotton, soybeans, and small grain. In recent years, the acreage of cotton has decreased and that of soybeans has increased. Cotton, however, remains the most important crop in the county. Corn and hay are grown for livestock feed. About half of the county is wooded.

This soil survey updates the survey of Bamberg County published in 1966 (3). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section gives general information about Bamberg County. It describes physiography, drainage, and water supply; geology; and climate.

Physiography, Drainage, and Water Supply

Bamberg County is within the Atlantic Coastal Plain. Most of the county west of U.S. Highway 301 is in the upper Coastal Plain, but the greater part of the county is in the lower Coastal Plain.

Most of the areas in the upper Coastal Plain are nearly level or gently sloping. Only a small total acreage is wet enough to be unsuitable for farming, but wet depressions called Grady ponds are common. These wet areas are 5 to 50 acres in size.

East of U.S. Highway 301, areas are nearly flat, as is typical of the lower Coastal Plain. Many of these level areas are depressional and poorly drained. The largest poorly drained areas are in the southeastern part of the county, east of Hunters Chapel School.

In the nearly level central part of the county, there are many shallow depressions that range in size from only a few acres to a square mile. These depressions are called Carolina bays. They are roughly elliptical, or egg shaped, and are oriented in the same direction. The larger end of the bays faces northwest, and the smaller end faces southeast. These bays are surrounded by sandy areas that are 3 to 10 feet higher than the depressions. Most of the depressions are wet year-round, and some occur as swamps covered with a heavy growth of cypress and gum. Saucerlike depressions that have no outlets and resemble sinkholes occur in several places. A few of these depressions are filled with water, and the rest are mostly swampy.

The relief of the survey area varies widely. It is gently sloping to somewhat hilly in the western and northwestern two-fifths of the county. The middle, southern, and eastern parts of the county are generally level but are depressional in places. The elevation of the county ranges from 100 to 270 feet above sea level. The land slopes gradually from the western boundary to the southeastern.

The original plain has not been dissected much by streams. Streams generally flow in poorly defined channels and are winding and sluggish. All of them are bordered by strips ranging in width from 100 feet, along the smallest streams, to as much as 2 miles, along the South Fork Edisto River. These strips formed when the streams

overflowed. The largest streams are in the upper Coastal Plain. In the eastern part of the county, there are a few small streams and some large areas that do not have any streams.

All of the surface drainage in the county flows into the South Fork Edisto River, the Salkehatchie River, the Little Salkehatchie River, and their tributaries. The South Fork Edisto River flows along the northeastern boundary of the county. The Salkehatchie River flows along the southwestern boundary. The Little Salkehatchie River, flowing from northwest to southeast, divides the county about equally.

Streams, ponds, and drilled wells are the chief sources of water for livestock. Water used for irrigation is obtained from streams and ponds. Dug or drilled wells supply ample amounts of water to rural homes.

Geology

The fifth marine terrace (Sunderland) occupies most of Bamberg County. The old shoreline of this terrace is 170 feet above present-day sea level. The sixth terrace (Coharie) and the seventh terrace (Brandywine) also occur in the county. The old shoreline of the sixth terrace is about 215 feet above present-day sea level, and that of the seventh terrace is about 270 feet above present-day sea level. The southeastern two-thirds of the county is in the lower Coastal Plain, and the northwestern third is in the upper Coastal Plain of the Aiken Plateau. The stream terraces of the South Fork Edisto River are younger than the marine terraces.

Climate

The climate in Bamberg County is favorable for farming. Extremes in temperature and rainfall are rare. Summers are long and fairly hot, but the mean temperature in July is only about 80 degrees F. Winters are mild, and the mean temperature in January is 46 degrees. Rainfall is well distributed throughout the year. It is heaviest in June, July, and August. Hurricanes occur in July, August, and September, but much of the rain that falls during these storms is lost as runoff.

[Table 1](#) gives data on temperature and precipitation for the survey area as recorded at Bamberg in the period 1961 to 1990. [Table 2](#) shows probable dates of the first freeze in fall and the last freeze in spring. [Table 3](#) provides data on length of the growing season.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total average annual precipitation is about 48 inches. Of this, 26 inches, or about 54 percent, usually falls in April through September. The growing season for most crops falls within this period.

Snowfall is rare. In most of the winters, there is no measurable snowfall. When it occurs, the snowfall is usually of short duration and is about 1 to 2 inches.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which

is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify the soils. After describing the soils and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. The data from these analyses and tests and from field-observed characteristics and soil properties are used to predict behavior of the soils under different uses. Interpretations are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a relatively high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in accurately locating boundaries.

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading “Use and Management of the Soils.”

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some “included” areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description.

Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Byars loam, 0 to 2 percent slopes, is a phase of the Byars series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Grifton-Osier complex, 0 to 2 percent slopes, frequently flooded, is an example.

[Table 4](#) gives the acreage and proportionate extent of each map unit. Other tables (see “Contents”) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AeB—Ailey coarse sand, 2 to 6 percent slopes

Setting

Landscape position: Slopes adjacent to drainageways

Shape of areas: Irregular

Size of areas: 10 to 50 acres

Composition

Ailey soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 7 inches—brown coarse sand

Subsurface layer:

7 to 27 inches—very pale brown coarse sand

27 to 31 inches—brownish yellow coarse sand

Subsoil:

31 to 41 inches—yellowish brown coarse sandy loam

41 to 47 inches—yellowish brown sandy clay loam that has red redoximorphic features

Substratum:

47 to 65 inches—strong brown sandy clay loam that has red and light gray redoximorphic features

65 to 75 inches—light yellowish brown and strong brown sandy clay that has red redoximorphic features and white pockets of kaolin clay

75 to 80 inches—brownish yellow and reddish yellow sandy clay that has red redoximorphic features and white pockets of kaolin clay

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga soils, which have sandy layers to a depth of 80 inches
- Troup soils and the not so well drained Blanton soils, which have sandy surface and subsurface layers to a depth of more than 40 inches

Similar:

- Uchee soils, which do not have low-activity clays and tend to occur on the Sunderland Terrace at elevations below 170 feet
- Bonneau and Wagram soils, which are on the more gentle slopes and do not have a decrease in clay content above a depth of 60 inches
- Barnwell soils, which have sandy surface layers less than 20 inches thick
- Neeses and Nankin soils, which have sandy surface layers less than 20 inches thick and have more than 35 percent clay in the control section

Use and Management

Major uses: Woodland and pasture

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

AeC—Ailey coarse sand, 6 to 10 percent slopes***Setting****Landscape position:* Slopes adjacent to drainageways*Shape of areas:* Irregular*Size of areas:* 10 to 50 acres***Composition***

Ailey soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 7 inches—brown coarse sand

Subsurface layer:

7 to 27 inches—very pale brown coarse sand

27 to 31 inches—brownish yellow coarse sand

Subsoil:

31 to 41 inches—yellowish brown coarse sandy loam

41 to 47 inches—yellowish brown sandy clay loam that has red redoximorphic features

Substratum:

47 to 65 inches—strong brown sandy clay loam that has red and light gray redoximorphic features

65 to 75 inches—light yellowish brown and strong brown sandy clay that has red redoximorphic features and white pockets of kaolin clay

75 to 80 inches—brownish yellow and reddish yellow sandy clay that has red redoximorphic features and white pockets of kaolin clay

Soil Properties and Qualities*Permeability:* Slow*Available water capacity:* Low*Organic matter content:* Low*Surface runoff:* Low*Hazard of erosion:* Moderate*Depth to high water table:* More than 6 feet*Drainage class:* Well drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Alaga soils, which have sandy layers to a depth of 80 inches

- Troup soils and the not so well drained Blanton soils, which have sandy surface and subsurface layers to a depth of more than 40 inches

Similar:

- Uchee soils, which do not have low-activity clays and tend to occur on the Sunderland Terrace at elevations below 170 feet
- Bonneau and Wagram soils, which are on the more gentle slopes and do not have a decrease in clay content above a depth of 60 inches
- Barnwell soils, which have sandy surface layers less than 20 inches thick
- Neeses and Nankin soils, which have sandy surface layers less than 20 inches thick and have more than 35 percent clay in the control section
- Areas that have slopes of 10 percent to more than 25 percent

Use and Management

Major uses: Woodland and pasture

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

AIB—Alaga coarse sand, 0 to 6 percent slopes***Setting***

Landscape position: Uplands and stream terraces

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Alaga soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 5 inches—brown coarse sand

Substratum:

5 to 57 inches—yellowish red coarse sand

57 to 80 inches—brownish yellow coarse sand

Soil Properties and Qualities

Permeability: Rapid

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: 4 to 6 feet

Drainage class: Somewhat excessively drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Blanton, Albany, and Troup soils, which have an argillic horizon between depths of 40 and 80 inches

Similar:

- Foxworth soils, which have a water table between depths of 48 and 72 inches
- Quartzipsamments that have less than 10 percent silt plus clay in the control section or have lamellae below a depth of 40 inches
- Some areas that have slopes ranging from 6 percent to more than 25 percent and commonly are adjacent to drainageways and rivers

Use and Management

Major uses: Woodland and pasture

Agricultural Development**Cropland**

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Rapid permeability

Management measures and considerations:

- The pollution of shallow ground water is a hazard because of the poor filtering capacity.
- Filter fields can be lined with less permeable materials, or effluent can be pumped to a better suited site.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

AnA—Albany sand, 0 to 2 percent slopes

Setting

Landscape position: Low sandy ridges of the Coastal Plain

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Albany soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 6 inches—very dark gray sand

Subsurface layer:

6 to 11 inches—yellowish brown sand

11 to 22 inches—light yellowish brown sand

22 to 44 inches—light gray sand that has strong brown redoximorphic features

Subsoil:

44 to 52 inches—gray sandy clay loam that has yellowish brown and brown redoximorphic features

52 to 73 inches—gray sandy clay loam that has light olive brown redoximorphic features

Substratum:

73 to 80 inches—dark gray clay that has yellowish brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Very low or low

Organic matter content: Moderately low

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 1.0 to 2.5 feet

Drainage class: Somewhat poorly drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Echaw and Seagate soils, which have spodic horizons
- Byars, Coxville, and Rembert soils, which are clayey, have thin surface horizons, and occur in small, isolated depressions (less than 1 acre in size)

Similar:

- Bonneau and Ocilla soils, which have surface and subsurface horizons less than 40 inches thick
- Plummer soils, which are more poorly drained than the Albany soil

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland*Suitability:* Well suited*Management concerns:* Wetness*Management measures and considerations:*

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites***Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping*Suitability:* Poorly suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

AuB—Autryville sand, 0 to 6 percent slopes***Setting****Landscape position:* Uplands*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Autryville soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 8 inches—brown sand

Subsurface layer:

8 to 24 inches—light yellowish brown sand

Subsoil:

24 to 42 inches—yellowish brown fine sandy loam

42 to 63 inches—yellowish brown sand

63 to 72 inches—olive yellow sandy clay loam that has reddish yellow and light gray redoximorphic features

72 to 80 inches—light gray sandy clay loam that has red and strong brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Negligible

Hazard of erosion: None

Depth to high water table: 4 to 6 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga and Foxworth soils, which are sandy throughout the upper 80 inches

Similar:

- Bonneau soils, which are not bisequal
- Blanton soils, which are not bisequal and do not have an increase in clay content above a depth of 40 inches
- Noboco and Norfolk soils, which are not bisequal and have surface layers less than 20 inches thick

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development**Building sites***Suitability:* Well suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

BaB—Barnwell loamy sand, 2 to 6 percent slopes***Setting****Landscape position:* Coastal Plain uplands*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Barnwell soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 8 inches—pale brown loamy sand

Subsoil:

8 to 25 inches—strong brown sandy clay loam

25 to 45 inches—strong brown sandy clay loam that has yellowish red redoximorphic features

Substratum:

45 to 53 inches—yellowish brown and strong brown sandy clay that has very pale brown and red redoximorphic features

53 to 75 inches—very pale brown, yellowish brown, and strong brown sandy clay loam that has strata of sandy loam and red redoximorphic features

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: 3.5 to 5.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and have a dense, compacted substratum
- Troup and Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Lynchburg, Rains, and Coxville soils, which have a high water table within a depth of 1 foot

Similar:

- Norfolk soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches
- Orangeburg soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches and have redder hues than the Barnwell soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.

- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

BaC—Barnwell loamy sand, 6 to 10 percent slopes

Setting

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Barnwell soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 8 inches—pale brown loamy sand

Subsoil:

8 to 25 inches—strong brown sandy clay loam

25 to 45 inches—strong brown sandy clay loam that has yellowish red redoximorphic features

Substratum:

45 to 53 inches—yellowish brown and strong brown sandy clay that has very pale brown and red redoximorphic features

53 to 75 inches—very pale brown, yellowish brown, and strong brown sandy clay loam that has strata of sandy loam and red redoximorphic features

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: 3.5 to 5.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and have a dense, compacted substratum
- Troup and Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Lynchburg, Rains, and Coxville soils, which have a high water table within a depth of 1 foot

Similar:

- Norfolk soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches
- Orangeburg soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches and which have redder hues than the Barnwell soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Suited

Management concerns: Slow permeability and slope

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and slope

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

BeB2—Barnwell sandy loam, 2 to 6 percent slopes, eroded

Setting

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Barnwell soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 4 inches—pale brown sandy loam

Subsoil:

4 to 25 inches—strong brown sandy clay loam

25 to 45 inches—strong brown sandy clay loam that has yellowish red redoximorphic features

Substratum:

45 to 53 inches—yellowish brown and strong brown sandy clay that has very pale brown and red redoximorphic features

53 to 75 inches—very pale brown, yellowish brown, and strong brown sandy clay loam that has strata of sandy loam and red redoximorphic features

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: 3.5 to 5.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and have a dense, compacted substratum
- Troup and Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Lynchburg, Rains, and Coxville soils, which have a high water table within a depth of 1 foot

Similar:

- Norfolk soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches
- Orangeburg soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches and which have redder hues than the Barnwell soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Well suited*Management concerns:* Erosion*Management measures and considerations:*

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

BeC2—Barnwell sandy loam, 6 to 10 percent slopes, eroded***Setting****Landscape position:* Coastal Plain uplands*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Barnwell soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 4 inches—pale brown sandy loam

Subsoil:

4 to 25 inches—strong brown sandy clay loam

25 to 45 inches—strong brown sandy clay loam that has yellowish red redoximorphic features

Substratum:

45 to 53 inches—yellowish brown and strong brown sandy clay that has very pale brown and red redoximorphic features

53 to 75 inches—very pale brown, yellowish brown, and strong brown sandy clay loam that has strata of sandy loam and red redoximorphic features

Soil Properties and Qualities*Permeability:* Slow*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Medium*Hazard of erosion:* Moderate*Depth to high water table:* 3.5 to 5.0 feet*Drainage class:* Well drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and have a dense, compacted substratum
- Troup and Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick

- Lynchburg, Rains, and Coxville soils, which have a high water table within a depth of 1 foot

Similar:

- Norfolk soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches
- Orangeburg soils, which have a subsoil that does not have a 20 percent decrease in clay content in the upper 60 inches and which have redder hues than the Barnwell soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Suited

Management concerns: Slow permeability and slope

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and slope

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

BnA—Blanton sand, 0 to 2 percent slopes***Setting***

Landscape position: Upland ridges, side slopes, and stream terraces

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Blanton soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 5 inches—yellowish brown sand

Subsurface layer:

5 to 19 inches—brownish yellow coarse sand

19 to 44 inches—very pale brown coarse sand

Subsoil:

44 to 63 inches—yellowish brown sandy clay loam that has red and gray redoximorphic features

Substratum:

63 to 80 inches—strong brown, red, and gray sandy clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: 4.0 to 6.0 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Alaga and Foxworth soils, which have sandy layers to a depth of 80 inches

Similar:

- Albany soils, which have a water table within a depth of 30 inches
- Troup soils, which have a water table below a depth of 72 inches
- Ailey, Uchee, Bonneau, and Ocilla soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Some areas of soils that have low-activity clays and are above elevations of 170 feet

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

BnB—Blanton sand, 2 to 6 percent slopes

Setting

Landscape position: Upland ridges, side slopes, and stream terraces

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Blanton soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 5 inches—yellowish brown sand

Subsurface layer:

5 to 19 inches—brownish yellow coarse sand

19 to 44 inches—very pale brown coarse sand

Subsoil:

44 to 63 inches—yellowish brown sandy clay loam that has red and gray redoximorphic features

Substratum:

63 to 80 inches—strong brown, red, and gray sandy clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: 4.0 to 6.0 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga and Foxworth soils, which have sandy layers to a depth of 80 inches

Similar:

- Albany soils, which have a water table within a depth of 30 inches
- Troup soils, which have a water table below a depth of 72 inches
- Ailey, Uchee, Bonneau, and Ocilla soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Some areas of soils that have low-activity clays and are above elevations of 170 feet

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites***Suitability:* Well suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

BnC—Blanton sand, 6 to 10 percent slopes***Setting****Landscape position:* Upland ridges, side slopes, and stream terraces*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Blanton soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 5 inches—yellowish brown sand

Subsurface layer:

5 to 19 inches—brownish yellow coarse sand

19 to 44 inches—very pale brown coarse sand

Subsoil:

44 to 63 inches—yellowish brown sandy clay loam that has red and gray redoximorphic features

Substratum:

63 to 80 inches—strong brown, red, and gray sandy clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Slight

Depth to high water table: 4.0 to 6.0 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Alaga and Foxworth soils, which have sandy layers to a depth of 80 inches

Similar:

- Albany soils, which have a water table within a depth of 30 inches
- Troup soils, which have a water table below a depth of 72 inches
- Ailey, Uchee, Bonneau, and Ocilla soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Some areas of Blanton soils on slopes ranging from 10 to more than 25 percent
- Some areas of soils that have low-activity clays and are above elevations of 170 feet

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Suited

Management concerns: Wetness and slope

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity and slope

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

BoA—Bonneau sand, 0 to 2 percent slopes

Setting

Landscape position: Low ridges

Shape of areas: Irregular

Size of areas: 10 to 150 acres

Composition

Bonneau soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 6 inches—brown sand

Subsurface layer:

6 to 26 inches—light yellowish brown sand

Subsoil:

26 to 41 inches—yellowish brown sandy clay loam that has red and strong brown redoximorphic features

41 to 52 inches—yellowish brown sandy clay that has red, strong brown, and light brownish gray redoximorphic features

52 to 66 inches—strong brown and red sandy clay that has light brownish gray redoximorphic features

Substratum:

66 to 80 inches—strong brown and red sandy clay that has light brownish gray redoximorphic features and strata of sand

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: 2.5 to 5.0 feet

Drainage class: Well drained or somewhat excessively drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Albany soils, which have a sandy surface layer more than 40 inches thick and a water table within a depth of 30 inches
- Lynchburg soils, which have a water table within a depth of 30 inches

Similar:

- Autryville soils, which are bisequal
- Ailey and Uchee soils, which have a 20 percent decrease in clay content within a depth of 60 inches
- Norfolk, Noboco, Goldsboro, and Barnwell soils, which have surface layers less than 20 inches thick
- Blanton soils, which have surface layers more than 40 inches thick
- Ocilla soils, which have a water table within a depth of 30 inches
- Wagram soils, which have a water table below a depth of 60 inches
- Soils that have low-activity clays in the B horizon and tend to occur in delineations above elevations of 170 feet on the Coharie and Brandywine Terraces

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Well suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

BoB—Bonneau sand, 2 to 6 percent slopes

Setting

Landscape position: Low ridges

Shape of areas: Irregular

Size of areas: 10 to 150 acres

Composition

Bonneau soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 6 inches—brown sand

Subsurface layer:

6 to 26 inches—light yellowish brown sand

Subsoil:

26 to 41 inches—yellowish brown sandy clay loam that has red and strong brown redoximorphic features

41 to 52 inches—yellowish brown sandy clay that has red, strong brown, and light brownish gray redoximorphic features

52 to 66 inches—strong brown and red sandy clay that has light brownish gray redoximorphic features

Substratum:

66 to 80 inches—strong brown and red sandy clay that has light brownish gray redoximorphic features and strata of sand

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: 2.5 to 5.0 feet

Drainage class: Well drained or somewhat excessively drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Albany soils, which have a sandy surface layer more than 40 inches thick and a water table within a depth of 30 inches
- Lynchburg soils, which have a water table within a depth of 30 inches

Similar:

- Autryville soils, which are bisequal
- Ailey and Uchee soils, which have a 20 percent decrease in clay content within a depth of 60 inches
- Norfolk, Noboco, Goldsboro, and Barnwell soils, which have surface layers less than 20 inches thick
- Blanton soils, which have surface layers more than 40 inches thick
- Ocilla soils, which have a water table within a depth of 30 inches
- Wagram soils, which have a water table below a depth of 60 inches
- Soils that have low-activity clays in the B horizon and tend to occur in delineations above elevations of 170 feet on the Coharie and Brandywine Terraces

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Well suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

ByA—Byars loam, 0 to 2 percent slopes***Setting****Landscape position:* Depressions and undifferentiated drainageways*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Byars soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 12 inches—black loam

Subsoil:

12 to 38 inches—very dark gray clay that has brown redoximorphic features

38 to 52 inches—dark gray clay that has brown redoximorphic features

Substratum:

52 to 80 inches—dark gray and bluish gray clay that has brown and yellowish brown redoximorphic features

Soil Properties and Qualities*Permeability:* Moderately slow*Available water capacity:* High*Organic matter content:* Moderate or high*Surface runoff:* Negligible*Hazard of erosion:* None*High water table:* 1 foot above the surface to 2 feet below*Drainage class:* Very poorly drained*Ponding or flooding:* Common***Minor Components****Dissimilar:*

- Lynchburg and similar clayey soils that have a water table below the surface
- Rains soils, which are fine-loamy, do not have a thick dark surface layer, and tend not to pond

Similar:

- McColl, Coxville, and Rembert soils, which do not have a thick dark surface layer

- Some areas of soils that are fine-loamy, have a thick dark surface layer, or have mucky surface textures

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness, ponding, and flooding

Pasture

Suitability: Not suited

Woodland

Suitability: Suited (primarily for water-tolerant hardwoods)

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness, ponding, and flooding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness, ponding, and flooding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness, ponding, and flooding

CoA—Coxville fine sandy loam, 0 to 2 percent slopes

Setting

Landscape position: Depressions and drainageways

Shape of areas: Oval and irregular

Size of areas: 10 to 300 acres

Composition

Coxville soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 5 inches— very dark gray fine sandy loam

Subsoil:

5 to 9 inches—gray clay loam that has yellowish brown redoximorphic features

9 to 62 inches—gray clay that has brown redoximorphic features

62 to 80 inches—gray and dark gray clay

Soil Properties and Qualities

Permeability: Moderately slow or slow

Available water capacity: High

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0 to 1 foot

Drainage class: Poorly drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ocilla soils, which are fine-loamy, have a sandy surface layer 20 to 40 inches thick, and are better drained than the Coxville soil
- Some areas of fine-loamy soils that have a thick, black surface layer more than 10 inches thick
- Plummer soils, which have a sandy surface layer more than 40 inches thick

Similar:

- Rains and Ogeechee soils, which have less than 35 percent clay in the control section
- Lynchburg soils, which have less than 35 percent clay in the control section and are better drained than the Coxville soil
- Some areas of soils that have surface layers 20 to 40 inches thick
- Byars soils, which have a black surface layer more than 10 inches thick
- Rembert and McColl soils, which have a more than 20 percent decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites***Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings

Septic tank absorption fields*Suitability:* Poorly suited*Management concerns:* Wetness and permeability*Management measures and considerations:*

- Specially designed systems can be installed, or effluent can be pumped to a better suited site.

Lawns and landscaping*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

EcA—Echaw fine sand, 0 to 2 percent slopes***Setting****Landscape position:* Low sandy ridges of the Coastal Plain*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Echaw soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 5 inches—very dark grayish brown fine sand

Subsurface layer:

5 to 12 inches—brown fine sand

12 to 23 inches—brown fine sand that has strong brown redoximorphic features

23 to 33 inches—grayish brown and yellowish brown fine sand that has strong brown redoximorphic features

Subsoil:

33 to 45 inches—dark reddish gray fine sand

45 to 58 inches—dark reddish brown sand that has strong brown redoximorphic features

Substratum:

58 to 80 inches—yellowish brown sand that has strong brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderately rapid or rapid

Available water capacity: Very low or low

Organic matter content: Moderately low

Surface runoff: Very low

Hazard of erosion: None

Depth to high water table: 2.5 to 5.0 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Byars, Coxville, and Rembert soils, which are clayey, have thin surface horizons, and occur in small, isolated depressions (less than 1 acre in size)
- Albany, Bonneau, and Ocilla soils, which have argillic horizons and do not have a spodic horizon

Similar:

- Seagate soils, which are more poorly drained than the Echaw soil and have an argillic horizon below the spodic horizon

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites**

Suitability: Suited

Management concerns: Wetness and stability of cutbanks

Septic tank absorption fields

Suitability: Suited

Management concerns: Wetness and poor filtering capacity

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

EoA—Ellore loamy sand, 0 to 2 percent slopes, frequently flooded***Setting***

Landscape position: Flood plains and drainageways

Shape of areas: Irregular

Size of areas: 10 to 50 acres

Composition

Ellore soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 6 inches—black loamy sand

Subsurface layer:

6 to 23 inches—light brownish gray sand

Subsoil:

23 to 27 inches—grayish brown sandy loam that has dark grayish brown redoximorphic features

27 to 42 inches—gray sandy loam that has strong brown redoximorphic features

45 to 53 inches—gray loamy sand that has light brownish gray redoximorphic features

53 to 69 inches—light gray sandy loam that has olive yellow redoximorphic features

Substratum:

69 to 80 inches—light gray sandy loam that has olive yellow redoximorphic features

Soil Properties and Qualities

Permeability: Moderately rapid

Available water capacity: Moderate

Organic matter content: High

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0 to 1 foot

Drainage class: Poorly drained

Ponding or flooding: Frequent; brief in duration

Minor Components

Dissimilar:

- Rains soils, which do not have a sandy surface layer more than 20 inches thick, are more acid than the Ellore soil, and do not have C material above a depth of 60 inches
- Osier soils, which are sandy throughout the upper 80 inches
- Johnston soils, which have a dark surface layer more than 24 inches thick and do not have a Bt horizon

Similar:

- Ogeechee and Lumbee soils, which are more acid than the Ellore soil and do not have a sandy surface layer more than 20 inches thick
- Plummer soils, which are more acid than the Ellore soil and have a sandy surface layer more than 40 inches thick

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Pasture

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

EuA—Eunola fine sandy loam, 0 to 2 percent slopes

Setting

Landscape position: Low stream terraces

Shape of areas: Irregular

Size of areas: 5 to 100 acres

Composition

Eunola soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 9 inches—dark grayish brown fine sandy loam

Subsoil:

9 to 22 inches—yellowish brown sandy clay loam that has gray and strong brown redoximorphic features

22 to 36 inches—brownish yellow fine sandy loam that has light gray and strong brown redoximorphic features

36 to 55 inches—gray and brownish yellow fine sandy loam that has strong brown redoximorphic features

Substratum:

55 to 80 inches—brownish yellow and light gray coarse sand

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Moderately low

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 1.5 to 2.5 feet

Drainage class: Moderately well drained

Ponding or flooding: Occasional; very brief in duration

Minor Components

Dissimilar:

- Wahee soils, which are somewhat poorly drained and have more than 35 percent clay in the upper 20 inches of the B horizon
- Meggett and Rembert soils, which are poorly drained or very poorly drained and have more than 35 percent clay in the control section

Similar:

- Johns soils, which have a contrasting particle size within a depth of 40 inches
- Soils that have more than 35 percent clay in the upper 20 inches of the B horizon

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites***Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

FsA—Fluvaquents-Osier-Grifton complex, 0 to 2 percent slopes, frequently flooded***Setting****Landscape position:* Flood plains*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres

Composition

Fluvaquents and similar inclusions: 30 percent
Osier soil and similar soils: 25 percent
Grifton soil and similar soils: 25 percent
Dissimilar soils: 20 percent

Typical Profile

Fluvaquents

Surface layer:

0 to 1 inch—fibric material consisting of hardwood leaves, stems, and other debris

Subsurface layer:

1 to 35 inches—white sand

35 to 38 inches—dark grayish brown sand

Substratum:

38 to 52 inches—gray sand

52 to 68 inches—light brownish gray coarse sand

68 to 80 inches—light gray coarse sand

Osier

Surface layer:

0 to 3 inches—very dark brown loamy sand

Substratum:

3 to 42 inches—dark gray loamy sand

42 to 58 inches—light brownish gray coarse sand

58 to 80 inches—light gray coarse sand

Grifton

Surface layer:

0 to 7 inches—very dark gray loam

Subsoil:

7 to 35 inches—gray sandy loam that has brownish yellow redoximorphic features

35 to 56 inches—gray sandy clay loam

Substratum:

56 to 80 inches—gray sand

Soil Properties and Qualities

Permeability: Fluvaquents and Grifton—moderate; Osier—rapid

Available water capacity: Fluvaquents and Grifton—moderate; Osier—very low

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: Fluvaquents and Grifton—0.5 to 1.0 foot; Osier—0 to 0.5 foot

Drainage class: Poorly drained

Ponding or flooding: Common

Minor Components

Dissimilar:

- Meggett soils, which are clayey
- Wahee soils, which are clayey and are better drained than the major soils

Similar:

- Johnston and Hobonny soils, which occur in areas of slow moving to stagnant water and have a surface layer that is thicker and has a higher content of organic matter than the surface layer of the major soils
- Plummer soils, which have an argillic horizon below a depth of 40 inches

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Not suited

Management concerns: Wetness and flooding

Pasture

Suitability: Not suited

Management concerns: Wetness and flooding

Woodland

Suitability: Suited (primarily for water-tolerant hardwoods)

Management concerns: Wetness and flooding

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites**

Suitability: Not suited

Management concerns: Wetness and flooding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness and flooding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness and flooding

FxB—Foxworth sand, 0 to 6 percent slopes***Setting***

Landscape position: Interstream divides and edges of bays, creeks, and rivers

Shape of areas: Irregular

Size of areas: 5 to 50 acres

Composition

Foxworth soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 6 inches—yellowish brown sand

Substratum:

6 to 11 inches—very pale brown sand

11 to 42 inches—brownish yellow sand

42 to 65 inches—light gray sand that has brownish yellow redoximorphic features

65 to 80 inches—light gray sand

Soil Properties and Qualities

Permeability: Rapid

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: None

Depth to high water table: 4 to 6 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Osier soils, which are poorly drained
- Blanton and Albany soils, which have an argillic horizon between depths of 40 and 80 inches

Similar:

- Some areas of soils that have a water table within a depth of 30 inches
- Alaga soils, which are better drained and have redder hues than the Foxworth soil
- Quartzipsamments that have less than 10 percent silt plus clay in the control section or have lamellae below a depth of 40 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Well suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development**Building sites***Suitability:* Suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Suited*Management concerns:* Wetness and permeability*Management measures and considerations:*

- Specially designed systems can be installed.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Low available water capacity*Management measures and considerations:*

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

GoA—Goldsboro loamy sand, 0 to 2 percent slopes***Setting****Landscape position:* Broad interstream divides*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Goldsboro soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 5 inches—very dark grayish brown loamy sand

Subsoil:

5 to 13 inches—yellowish brown sandy loam that has strong brown and pale brown redoximorphic features

13 to 30 inches—yellowish brown and gray sandy clay loam that has strong brown redoximorphic features

30 to 57 inches—yellowish brown sandy clay loam that has gray and strong brown redoximorphic features

57 to 68 inches—yellowish brown sandy clay loam that has gray and yellowish red redoximorphic features

68 to 80 inches—yellowish brown sandy clay loam that has gray, light yellowish brown, and red redoximorphic features

Soil Properties and Qualities*Permeability:* Moderate*Available water capacity:* Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: None

Depth to high water table: 2 to 3 feet

Drainage class: Moderately well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Rains soils, which are poorly drained

Similar:

- Ocilla and Bonneau soils, which have sandy surface and subsurface layers more than 20 inches thick
- Noboco and Norfolk soils, which are well drained
- Lynchburg soils, which are somewhat poorly drained
- Eunola soils, which have a more than 20 percent decrease in clay content within the upper 60 inches

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

GsA—Grifton-Osier complex, 0 to 2 percent slopes, frequently flooded

Setting

Landscape position: Flood plains

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Grifton soil and similar soils: 45 percent

Osier soil and similar soils: 40 percent

Dissimilar soils: 15 percent

Typical Profile

Grifton

Surface layer:

0 to 7 inches—very dark gray loam

Subsoil:

7 to 35 inches—gray sandy loam that has brownish yellow redoximorphic features

35 to 56 inches—gray sandy clay loam

Substratum:

56 to 80 inches—gray sand

Osier

Surface layer:

0 to 3 inches—very dark brown loamy sand

Substratum:

3 to 42 inches—dark gray loamy sand

42 to 58 inches—light brownish gray coarse sand

58 to 80 inches—light gray coarse sand

Soil Properties and Qualities

Permeability: Grifton—moderate; Osier—rapid

Available water capacity: Grifton—moderate; Osier—very low

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: Grifton—0.5 to 1.0 foot; Osier—0 to 0.5 foot

Drainage class: Poorly drained

Ponding or flooding: Common

Minor Components

Dissimilar:

- Meggett soils, which are clayey
- Wahee soils, which are clayey and are better drained than the Grifton and Osier soils

Similar:

- Johnston and Hobonny soils, which are in areas of slow moving to stagnant water and have a surface layer that is thicker and has a higher content of organic matter than the surface layer of the Grifton and Osier soils
- Plummer soils, which have an argillic horizon below a depth of 40 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness and flooding

Pasture

Suitability: Not suited

Management concerns: Wetness and flooding

Woodland

Suitability: Suited (primarily for water-tolerant hardwoods)

Management concerns: Wetness and flooding

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness and flooding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness and flooding

Lawns and landscaping*Suitability:* Not suited*Management concerns:* Wetness and flooding**HbA—Hobonny muck, 0 to 1 percent slopes, occasionally flooded*****Setting****Landscape position:* Backwater areas of flood plains and drainageways*Shape of areas:* Irregular*Size of areas:* 5 to 50 acres***Composition***

Hobonny soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 58 inches—black sapric material

Subsurface layer:

58 to 65 inches—dark reddish brown hemic material

Substratum:

65 to 80 inches—light gray sand

Soil Properties and Qualities*Permeability:* Moderately rapid*Available water capacity:* Very high*Organic matter content:* Very high*Surface runoff:* Very high*Hazard of erosion:* None*High water table:* 0 to 1 foot above the surface*Drainage class:* Very poorly drained*Ponding or flooding:* Occasional; very long in duration***Minor Components****Dissimilar:*

- Meggett soils, which are clayey
- Wahee soils, which are clayey and are better drained than the Hobonny soil
- Plummer soils, which have an argillic horizon below a depth of 40 inches

Similar:

- Johnston and Osier soils, which have mucky surface layers

Use and Management**Major uses:** Woodland***Agricultural Development*****Cropland***Suitability:* Not suited*Management concerns:* Wetness, flooding, and ponding**Pasture***Suitability:* Not suited

Management concerns: Wetness, flooding, and ponding

Woodland

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Harvesting trees during dry periods and using a cable from a higher site or helicopter help to reduce the wetness limitation.

Homesite and Urban Development**Building sites**

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness, flooding, and ponding

JnA—Johns fine sandy loam, 0 to 2 percent slopes***Setting***

Landscape position: Broad flats and slightly depressional areas on terraces

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Johns soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 5 inches—very dark grayish brown fine sandy loam

Subsurface layer:

5 to 9 inches—light yellowish brown fine sandy loam

Subsoil:

9 to 18 inches—yellowish brown sandy clay loam that has red and light brownish gray redoximorphic features

18 to 27 inches—brownish yellow coarse sandy loam that has gray, red, and light yellowish brown redoximorphic features

Substratum:

27 to 41 inches—strong brown and light yellowish brown coarse sand that has yellowish red redoximorphic features

41 to 62 inches—light gray coarse sand that has brownish yellow redoximorphic features

62 to 80 inches—light brownish gray coarse sand

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Moderately low

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 1.5 to 3.0 feet

Drainage class: Somewhat poorly drained or moderately well drained

Ponding or flooding: Rare

Minor Components

Dissimilar:

- Meggett soils, which are clayey and poorly drained
- Grifton soils, which are fine-loamy and poorly drained
- Osier soils, which are sandy throughout the upper 80 inches and are poorly drained

Similar:

- Eunola soils, which do not have a contrasting particle size within a depth of 40 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

JsA—Johnston sandy loam, 0 to 2 percent slopes, frequently flooded***Setting***

Landscape position: Drainageways

Shape of areas: Irregular

Size of areas: 10 to 300 acres

Composition

Johnston soil and similar soils: 75 to 95 percent

Dissimilar soils: 5 to 25 percent

Typical Profile

Surface layer:

3 to 0 inches—very dark brown undecomposed fibric material

0 to 26 inches—black sandy loam

Substratum:

26 to 36 inches—dark gray sandy loam that has black and dark grayish brown organic matter coatings

36 to 44 inches—light brownish gray sandy loam that has gray lenses of loamy fine sand

44 to 64 inches—brown loamy sand

64 to 72 inches—grayish brown sandy loam

Soil Properties and Qualities

Permeability: Rapid

Available water capacity: Low

Organic matter content: High

Surface runoff: Negligible

Hazard of erosion: None

High water table: 1.0 foot above the surface to 1.5 feet below

Drainage class: Very poorly drained

Ponding or flooding: Common

Minor Components

Dissimilar:

- Osier soils, which are sandy throughout the upper 80 inches and have a black surface layer less than 10 inches thick

- Ellore, Plummer, and Grifton soils, which have a 20 percent increase in clay content within a depth of 80 inches and have black surface horizons less than 10 inches thick
- Hobonny soils, which have organic surface layers

Similar:

- Soils that have black surface horizons more than 10 inches thick and have sandy textures to a depth of 80 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness and flooding

Pasture

Suitability: Not suited

Management concerns: Wetness and flooding

Woodland

Suitability: Suited (primarily for water-tolerant hardwoods)

Management concerns: Wetness and flooding

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness and flooding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness and flooding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness and flooding

LcB—Lucy sand, 0 to 6 percent slopes

Setting

Landscape position: Side slopes adjacent to drainageways

Shape of areas: Irregular

Size of areas: 10 to 30 acres

Composition

Lucy soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 6 inches—brown sand

Subsurface layer:

6 to 22 inches—light yellowish brown coarse sand that has reddish yellow redoximorphic features

22 to 28 inches—reddish yellow coarse sand

Subsoil:

28 to 64 inches—red sandy clay loam

64 to 72 inches—red sandy clay loam that has reddish yellow redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga soils, which have sandy layers to a depth of 80 inches
- Ocilla soils, which have a high water table within a depth of 1 to 2 feet

Similar:

- Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Ailey and Uchee soils, which have a dense, compacted subsoil
- Bonneau soils, which have a water table within a depth of 60 inches
- Wagram soils, which are not so red as the Lucy soil
- Orangeburg soils, which do not have a sandy surface layer that is thicker than 20 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Well suited

Management concerns: Rapid permeability

Management measures and considerations:

- The pollution of shallow ground water is a hazard because of the poor filtering capacity.
- Filter fields can be lined with less permeable materials, or effluent can be pumped to a better suited site.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

LuA—Lumbee loam, 0 to 2 percent slopes, frequently flooded

Setting

Landscape position: Stream terraces and drainageways

Shape of areas: Irregular

Size of areas: 10 to 50 acres

Composition

Lumbee soil and similar soils: 85 to 90 percent

Dissimilar soils: 10 to 15 percent

Typical Profile

Surface layer:

0 to 4 inches—very dark grayish brown loam

Subsurface layer:

4 to 12 inches—gray loamy fine sand

Subsoil:

12 to 25 inches—gray sandy clay loam that has strong brown redoximorphic features

25 to 38 inches—gray sandy clay loam that has yellowish brown redoximorphic features

Substratum:

38 to 54 inches—gray and dark gray fine sand that has thin strata of sandy clay
54 to 80 inches—light gray fine sand

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0 to 1 foot

Drainage class: Poorly drained

Ponding or flooding: Occasional; brief in duration

Minor Components*Dissimilar:*

- Lynchburg, Ocilla, and Johns soils, which are better drained than the Lumbree soil
- Osier soils, which are sandy throughout the upper 80 inches
- Plummer soils, which have sandy surface layers more than 40 inches thick

Similar:

- Rains and Ogeechee soils, which do not have sandy layers above a depth of 60 inches
- Ellore soils, which are less acid than the Lumbree soil and have a sandy surface layer that is more than 20 inches thick

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Not suited

Management concerns: Flooding and wetness

Pasture

Suitability: Not suited

Management concerns: Flooding and wetness

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites**

Suitability: Not suited

Management concerns: Flooding and wetness

Septic tank absorption fields*Suitability:* Not suited*Management concerns:* Flooding and wetness**Lawns and landscaping***Suitability:* Not suited*Management concerns:* Flooding and wetness**LyA—Lynchburg fine sandy loam, 0 to 2 percent slopes*****Setting****Landscape position:* Shallow depressions and broad interstream divides*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Lynchburg soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 7 inches—very dark grayish brown fine sandy loam

Subsoil:

7 to 13 inches—light olive brown and grayish brown sandy clay loam that has strong brown redoximorphic features

13 to 28 inches—gray sandy clay loam that has strong brown and yellowish brown redoximorphic features

28 to 44 inches—gray sandy clay loam that has brown, strong brown, and red redoximorphic features

44 to 62 inches—gray and grayish brown sandy clay loam that has strong brown and light gray redoximorphic features

Substratum:

62 to 80 inches—light gray, gray, red, and brownish yellow sandy clay loam

Soil Properties and Qualities*Permeability:* Moderate*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Very high*Hazard of erosion:* None*Depth to high water table:* 0.5 foot to 1.5 feet*Drainage class:* Somewhat poorly drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Albany soils, which have surface and subsurface layers more than 40 inches thick
- Plummer soils, which have surface and subsurface layers more than 40 inches thick and are more poorly drained than the Lynchburg soil
- Coxville soils, which are poorly drained and have a clayey subsoil

Similar:

- Ocilla soils, which have surface and subsurface layers more than 20 inches thick

- Goldsboro soils, which are better drained than the Lynchburg soil
- Rains soils, which are poorly drained
- Some areas of soils that have more clay than the Lynchburg soil or have a decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

McA—McColl loam, 0 to 2 percent slopes***Setting****Landscape position:* Depressions and drainageways*Shape of areas:* Oval and irregular*Size of areas:* 10 to 300 acres***Composition***

McColl soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 6 inches—very dark gray loam

Subsoil:

6 to 9 inches—dark grayish brown sandy clay loam

9 to 13 inches—light brownish gray clay

13 to 23 inches—light brownish gray clay that has red and strong brown sandy clay loam redoximorphic features

23 to 42 inches—strong brown sandy clay loam that has light gray and red redoximorphic features

42 to 63 inches—strong brown sandy clay loam that has pale brown, red, and light gray redoximorphic features

63 to 75 inches—strong brown sandy loam that has pale brown, red, and light gray redoximorphic features

Substratum:

75 to 80 inches—light gray sandy loam that has yellow redoximorphic features

Soil Properties and Qualities*Permeability:* Slow*Available water capacity:* Moderate*Organic matter content:* Moderate*Surface runoff:* Negligible*Hazard of erosion:* None*High water table:* 1 foot above the surface to 1 foot below*Drainage class:* Poorly drained*Ponding or flooding:* Occasional***Minor Components****Dissimilar:*

- Lynchburg and Eunola soils, which are better drained than the McColl soil
- Plummer soils, which have a sandy surface layer more than 40 inches thick, have less than 35 percent clay in the control section, and do not have a decrease in clay content of more than 20 percent within a depth of 60 inches

Similar:

- Rembert and Coxville soils, which are saturated in all layers within a depth of 80 inches
- Ogeechee and Rains soils, which are saturated in all layers within a depth of 80 inches and have less than 35 percent clay in the control section
- Byars soils, which have a thick, black surface layer more than 10 inches thick, do not have a decrease in clay content by more than 20 percent within a depth of 60 inches, and are saturated in all layers within a depth of 80 inches

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites**

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness and permeability

Management measures and considerations:

- Specially designed systems can be installed, or effluent can be pumped to a better suited site.

Lawns and landscaping*Suitability:* Poorly suited*Management concerns:* Wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

MgA—Meggett fine sandy loam, 0 to 2 percent slopes, frequently flooded

Setting*Landscape position:* Flood plains*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Meggett soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 4 inches—very dark gray fine sandy loam

Subsurface layer:

4 to 9 inches—dark gray fine sandy loam that has brown redoximorphic features

Subsoil:

9 to 28 inches—gray clay that has brown and yellowish brown redoximorphic features

28 to 48 inches—gray clay that has light brownish gray and bluish gray redoximorphic features

48 to 58 inches—gray sandy clay loam

Substratum:

58 to 80 inches—light gray loamy coarse sand

Soil Properties and Qualities*Permeability:* Moderately slow or slow*Available water capacity:* Moderate or high*Organic matter content:* Moderate or high*Surface runoff:* Very high*Hazard of erosion:* None*Depth to high water table:* 0 to 1 foot*Drainage class:* Poorly drained*Ponding or flooding:* Occasional***Minor Components****Dissimilar:*

- Osier soils and Fluvaquents, which are sandy throughout the upper 80 inches
- Foxworth soils, which are sandy throughout the upper 80 inches and are better drained than the Meggett soil

Similar:

- Grifton and Elloree soils, which have less than 35 percent clay in the control section
- Lumbee soils, which have less than 35 percent clay in the control section and are more acid than the Meggett soil

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness and flooding

Pasture

Suitability: Not suited

Management concerns: Wetness and flooding

Woodland

Suitability: Suited (primarily for water-tolerant hardwoods)

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness and flooding

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness and flooding

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness and flooding

NaB—Nankin loamy sand, 2 to 6 percent slopes

Setting

Landscape position: Uplands

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Nankin soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 4 inches—brown loamy sand

Subsoil:

4 to 16 inches—yellowish red sandy clay

16 to 26 inches—red sandy clay that has red and brownish yellow redoximorphic features

26 to 38 inches—strong brown sandy clay loam that has red redoximorphic features

38 to 52 inches—red and reddish yellow sandy clay loam that has light gray pockets of kaolin

52 to 80 inches—red sandy loam that has brownish yellow redoximorphic features

Soil Properties and Qualities

Permeability: Moderately slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: More than 6 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Ailey soils, which have sandy surface and subsurface layers more than 20 inches thick
- Alaga soils, which have sandy layers more than 80 inches thick

Similar:

- Neeses soils, which have a dense, compact substratum between depths of 20 and 40 inches
- Orangeburg and Barnwell soils, which have less than 35 percent clay in the upper 20 inches of the subsoil

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites***Suitability:* Well suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Poorly suited*Management concerns:* Slow permeability*Management measures and considerations:*

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Well suited*Management concerns:* Erosion*Management measures and considerations:*

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

NaC—Nankin loamy sand, 6 to 10 percent slopes***Setting****Landscape position:* Uplands*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Nankin soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile*Surface layer:*

0 to 4 inches—brown loamy sand

Subsoil:

4 to 16 inches—yellowish red sandy clay

16 to 26 inches—red sandy clay that has red and brownish yellow redoximorphic features

26 to 38 inches—strong brown sandy clay loam that has red redoximorphic features

38 to 52 inches—red and reddish yellow sandy clay loam that has light gray pockets of kaolin

52 to 80 inches—red sandy loam that has brownish yellow redoximorphic features

Soil Properties and Qualities*Permeability:* Moderately slow*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Medium*Hazard of erosion:* Moderate*Depth to high water table:* More than 6 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Ailey soils, which have sandy surface and subsurface layers more than 20 inches thick
- Alaga soils, which have sandy layers more than 80 inches thick

Similar:

- Neeses soils, which have a dense, compact substratum between depths of 20 and 40 inches
- Orangeburg and Barnwell soils, which have less than 35 percent clay in the upper 20 inches of the subsoil
- Some areas that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Erosion and slope*Management measures and considerations:*

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

NbB2—Nankin sandy loam, 2 to 6 percent slopes, eroded***Setting****Landscape position:* Uplands*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Nankin soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile*Surface layer:*

0 to 4 inches—brown sandy loam

Subsoil:

4 to 16 inches—yellowish red sandy clay

16 to 26 inches—yellowish red sandy clay that has red and brownish yellow redoximorphic features

26 to 38 inches—strong brown sandy clay loam that has red redoximorphic features

Substratum:

38 to 52 inches—red and strong brown sandy clay loam that has light gray pockets of kaolin

52 to 80 inches—red sandy loam that has brownish yellow redoximorphic features

Soil Properties and Qualities*Permeability:* Moderately slow*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Low*Hazard of erosion:* Moderate*Depth to high water table:* More than 6 feet*Drainage class:* Well drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Ailey soils, which have sandy surface and subsurface layers more than 20 inches thick
- Alaga soils, which have sandy layers more than 80 inches thick

Similar:

- Neeses soils, which have a dense, compact substratum between depths of 20 and 40 inches
- Orangeburg and Barnwell soils, which have less than 35 percent clay in the upper 20 inches of the subsoil
- Some areas that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Cropland

Agricultural Development**Cropland**

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites**

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and slope

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

NbC2—Nankin sandy loam, 6 to 10 percent slopes, eroded***Setting***

Landscape position: Uplands

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Nankin soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 4 inches—brown sandy loam

Subsoil:

4 to 16 inches—yellowish red sandy clay

16 to 26 inches—yellowish red sandy clay that has red and brownish yellow redoximorphic features

26 to 38 inches—strong brown sandy clay loam that has red redoximorphic features

Substratum:

38 to 52 inches—red and strong brown sandy clay loam that has light gray pockets of kaolin

52 to 80 inches—red sandy loam that has brownish yellow redoximorphic features

Soil Properties and Qualities

Permeability: Moderately slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Medium

Hazard of erosion: Moderate

Depth to high water table: More than 6 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Ailey soils, which have sandy surface and subsurface layers more than 20 inches thick
- Alaga soils, which have sandy layers more than 80 inches thick

Similar:

- Neeses soils, which have a dense, compact substratum between depths of 20 and 40 inches
- Orangeburg and Barnwell soils, which have less than 35 percent clay in the upper 20 inches of the subsoil
- Some areas that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Poorly suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and slope

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

NeB—Neeses loamy sand, 2 to 6 percent slopes

Setting

Landscape position: Side slopes on Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Neeses soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 5 inches—yellowish brown loamy sand

Subsurface layer:

5 to 8 inches—light yellowish brown loamy sand

Subsoil:

8 to 28 inches—strong brown sandy clay that has red redoximorphic features

28 to 37 inches—red sandy clay loam and yellowish brown and pale brown sandy clay

37 to 54 inches—red and reddish yellow sandy clay loam

Substratum:

54 to 85 inches—red sandy clay loam that has pockets of brownish yellow sandy clay material

Soil Properties and Qualities

Permeability: Very slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Lucy, Ailey, and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Small eroded spots
- Small areas of sandy deposits at the base of slopes

Similar:

- Barnwell soils, which have a subsoil of sandy clay loam
- Nankin soils, which have a subsoil that is deeper than that of the Neeses soil
- Some areas of soils that have a subsoil that is yellower than that of the Neeses soils or that are fine-loamy
- Some areas of the eroded phases of Nankin and Neeses soils

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Dense layer

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and droughtiness

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to minimize erosion.

NeC—Neeses loamy sand, 6 to 10 percent slopes

Setting

Landscape position: Side slopes on Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Neeses soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 5 inches—yellowish brown loamy sand

Subsurface layer:

5 to 8 inches—light yellowish brown loamy sand

Subsoil:

8 to 28 inches—strong brown sandy clay that has red redoximorphic features

28 to 37 inches—red sandy clay loam and yellowish brown and pale brown sandy clay

37 to 54 inches—red and reddish yellow sandy clay loam

Substratum:

54 to 85 inches—red sandy clay loam that has pockets of brownish yellow sandy clay material

Soil Properties and Qualities

Permeability: Very slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Lucy, Ailey, and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Small eroded spots
- Small areas of sandy deposits at the base of slopes

Similar:

- Barnwell soils, which have a subsoil of sandy clay loam
- Nankin soils, which have a subsoil that is deeper than that of the Neeses soil
- Some areas of soils that have a subsoil that is yellower than that of the Neeses soil or that are fine-loamy
- Areas of the eroded phases of Nankin and Neeses soils
- Areas near drainageways and streams that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Woodland

Agricultural Development**Cropland**

Suitability: Poorly suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.

- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope and dense layer

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and droughtiness

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to minimize erosion.

NnB2—Neeses sandy loam, 2 to 6 percent slopes, eroded

Setting

Landscape position: Side slopes on Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Neeses soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 4 inches—brown sandy loam

Subsoil:

4 to 22 inches—strong brown clay

22 to 29 inches—strong brown sandy clay that has light gray and red redoximorphic features

Substratum:

29 to 48 inches—red, light brownish gray, and strong brown sandy clay that has strata of sandy loam

48 to 54 inches—dusky red, light brownish gray, and strong brown sandy clay that has strata of sandy loam

54 to 80 inches—light gray, red, and strong brown sandy clay loam that has pockets of loamy sand

Soil Properties and Qualities

Permeability: Very slow

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Lucy, Ailey, and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Small eroded spots
- Small areas of sandy deposits at the base of slopes

Similar:

- Barnwell soils, which have a subsoil of sandy clay loam
- Nankin soils, which have a subsoil that is deeper than that of the Neeses soil
- Some areas of soils that have a subsoil that is yellower than that of the Neeses soil or that are fine-loamy
- Areas of uneroded Nankin and Neeses soils

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Dense layer

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Suited*Management concerns:* Erosion and droughtiness*Management measures and considerations:*

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to minimize erosion.

NnC2—Neeses sandy loam, 6 to 10 percent slopes, eroded***Setting****Landscape position:* Side slopes on Coastal Plain uplands*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Neeses soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 4 inches—brown sandy loam

Subsoil:

4 to 22 inches—strong brown clay

22 to 29 inches—strong brown sandy clay that has light gray and red redoximorphic features

Substratum:

29 to 48 inches—red, light brownish gray, and strong brown sandy clay that has strata of sandy loam

48 to 54 inches—dusky red, light brownish gray, and strong brown sandy clay that has strata of sandy loam

54 to 80 inches—light gray, red, and strong brown sandy clay loam that has pockets of loamy sand

Soil Properties and Qualities*Permeability:* Very slow*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Low*Hazard of erosion:* Moderate*Depth to high water table:* More than 6.0 feet*Drainage class:* Well drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Lucy, Ailey, and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick

- Small eroded spots
- Small areas of sandy deposits at the base of slopes

Similar:

- Barnwell soils, which have a subsoil of sandy clay loam
- Nankin soils, which have a subsoil that is deeper than that of the Neeses soil
- Some areas of soils that have a subsoil that is yellower than that of the Neeses soil or that are fine-loamy
- Some areas near drainageways and streams that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope and dense layer

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Erosion and droughtiness

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to minimize erosion.

NoA—Noboco fine sand, 0 to 2 percent slopes***Setting****Landscape position:* Coastal Plain uplands*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Noboco soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile*Surface layer:*

0 to 8 inches—dark grayish brown fine sand

Subsurface layer:

8 to 13 inches—light yellowish brown loamy sand that has dark grayish brown redoximorphic features

Subsoil:

13 to 25 inches—yellowish brown sandy clay loam

25 to 41 inches—yellowish brown sandy clay loam that has strong brown redoximorphic features

41 to 47 inches—yellowish brown sandy clay loam that has pale brown and red redoximorphic features

47 to 58 inches—yellowish brown sandy clay loam that has red and light brownish gray redoximorphic features

58 to 72 inches—light gray, yellowish brown, red, and brown clay loam

Soil Properties and Qualities*Permeability:* Moderate*Available water capacity:* Moderate*Organic matter content:* Low*Surface runoff:* Low*Hazard of erosion:* Slight*Depth to high water table:* 2.5 to 4.0 feet*Drainage class:* Well drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Nankin soils, which have a moderate hazard of erosion and a clay subsoil

Similar:

- Goldsboro soils, which have a high water table at a depth of 1.5 to 2.5 feet
- Norfolk soils, which have a high water table at a depth of more than 4 feet
- Orangeburg soils, which have a subsoil that has redder hues than that of the Noboco soil

- Bonneau and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a 20 percent decrease in clay content within a depth of 60 inches and have a moderate hazard of erosion

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.

Pasture

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: None

NoB—Noboco fine sand, 2 to 6 percent slopes

Setting

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Noboco soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 8 inches—dark grayish brown fine sand

Subsurface layer:

8 to 13 inches—light yellowish brown loamy sand that has dark grayish brown redoximorphic features

Subsoil:

13 to 25 inches—yellowish brown sandy clay loam

25 to 41 inches—yellowish brown sandy clay loam that has strong brown redoximorphic features

41 to 47 inches—yellowish brown sandy clay loam that has pale brown and red redoximorphic features

47 to 58 inches—yellowish brown sandy clay loam that has red and light brownish gray redoximorphic features

58 to 72 inches—light gray, yellowish brown, red, and brown clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Slight

Depth to high water table: 2.5 to 4.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Nankin soils, which have a moderate hazard of erosion and a clay subsoil

Similar:

- Goldsboro soils, which have a high water table at a depth of 1.5 to 2.5 feet
- Norfolk soils, which have a high water table at a depth of more than 4 feet
- Orangeburg soils, which have a subsoil that has redder hues than that of the Noboco soil
- Bonneau and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a 20 percent decrease in clay content within a depth of 60 inches and have a moderate hazard of erosion

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.

Pasture

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited *Management concerns:* Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Suited

Management concerns: None

NrA—Norfolk sand, 0 to 2 percent slopes

Setting

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Norfolk soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 8 inches—brown sand

Subsurface layer:

8 to 14 inches—light yellowish brown loamy sand

Subsoil:

14 to 32 inches—yellowish brown sandy clay loam

32 to 50 inches—yellowish brown sandy clay loam that has red redoximorphic features

50 to 57 inches—brownish yellow sandy clay loam that has yellowish brown, light yellowish brown, and light gray redoximorphic features

57 to 72 inches—light yellowish brown and yellowish brown sandy clay loam that has pockets of clean coarse sand and red and light gray redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Low or moderately low

Surface runoff: Low

Hazard of erosion: Slight

Depth to high water table: 4.0 to 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Nankin soils, which have a moderate hazard of erosion and a clay subsoil

Similar:

- Goldsboro soils, which have a high water table at a depth of 1.5 to 2.5 feet
- Noboco soils, which have a high water table at a depth of 2.5 to 4.0 feet
- Orangeburg soils, which have a subsoil that has redder hues than that of the Norfolk soil
- Bonneau and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a 20 percent decrease in clay content within a depth of 60 inches and have a moderate hazard of erosion

Use and Management

Major uses: Cropland

Agricultural Development**Cropland**

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.

Pasture

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: None

Management measures and considerations:

- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites***Suitability:* Suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Suited*Management concerns:* Slow permeability*Management measures and considerations:*

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Well suited*Management concerns:* None**NrB—Norfolk sand, 2 to 6 percent slopes*****Setting****Landscape position:* Coastal Plain uplands*Shape of areas:* Irregular*Size of areas:* 10 to 200 acres***Composition***

Norfolk soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile*Surface layer:*

0 to 8 inches—brown sand

Subsurface layer:

8 to 14 inches—light yellowish brown loamy sand

Subsoil:

14 to 32 inches—yellowish brown sandy clay loam

32 to 50 inches—yellowish brown sandy clay loam that has red redoximorphic features

50 to 57 inches—brownish yellow sandy clay loam that has yellowish brown, light yellowish brown, and light gray redoximorphic features

57 to 72 inches—light yellowish brown and yellowish brown sandy clay loam that has pockets of clean coarse sand and red and light gray redoximorphic features

Soil Properties and Qualities*Permeability:* Moderate*Available water capacity:* Moderate*Organic matter content:* Low or moderately low*Surface runoff:* Low*Hazard of erosion:* Slight*Depth to high water table:* 4.0 to 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Nankin soils, which have a moderate hazard of erosion and a clay subsoil

Similar:

- Goldsboro soils, which have a high water table at a depth of 1.5 to 2.5 feet
- Noboco soils, which have a high water table at a depth of 2.5 to 4.0 feet
- Orangeburg soils, which have a subsoil that has redder hues than that of the Norfolk soil
- Bonneau and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a 20 percent decrease in clay content within a depth of 60 inches and have a moderate hazard of erosion

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.

Pasture

Suitability: Well suited

Management concerns: None

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: None

Management measures and considerations:

- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields

Suitability: Suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping*Suitability:* Well suited*Management concerns:* None**OcA—Ocilla sand, 0 to 3 percent slopes*****Setting****Landscape position:* Low uplands and stream terraces of the Coastal Plain*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Ocilla soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile*Surface layer:*

0 to 7 inches—grayish brown sand

Subsurface layer:

7 to 23 inches—light olive brown sand

Subsoil:

23 to 34 inches—yellowish brown sandy clay loam that has red, strong brown, and gray redoximorphic features

34 to 65 inches—light gray sandy clay loam that has strong brown redoximorphic features

Substratum:

65 to 80 inches—brownish yellow and light gray sandy clay loam that is stratified with loamy sand and has red redoximorphic features

Soil Properties and Qualities*Permeability:* Moderate*Available water capacity:* Moderate*Organic matter content:* Moderately low*Surface runoff:* Very high*Hazard of erosion:* None*Depth to high water table:* 1.0 to 2.5 feet*Drainage class:* Somewhat poorly drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Echaw and Seagate soils, which have spodic horizons
- Wahee, Rembert, and Coxville soils, which are more poorly drained than the Ocilla soil, are clayey, and occur in small depressions
- Rains soils, which are more poorly drained than the Ocilla soil and do not have sandy surface layers more than 20 inches thick
- Plummer soils, which are more poorly drained than the Ocilla soil and have sandy surface layers more than 40 inches thick

Similar:

- Bonneau soils, which are better drained than the Ocilla soil

- Albany and Blanton soils, which have sandy surface layers more than 40 inches thick
- Goldsboro and Lynchburg soils, which have surface layers less than 20 inches thick
- Some areas of similar soils, which have sandy layers within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

OgA—Ogeechee loamy sand, 0 to 2 percent slopes***Setting***

Landscape position: Broad flats, drainageways, and depressions of the Coastal Plain

Shape of areas: Typically irregular; oval on minor extent of acreage

Size of areas: 10 to 50 acres

Composition

Ogeechee soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 7 inches—black loamy sand

Subsurface layer:

7 to 14 inches—light brownish gray and light gray loamy fine sand

Subsoil:

14 to 24 inches—gray sandy clay loam that has strong brown redoximorphic features

24 to 38 inches—gray sandy clay loam that has light brownish gray and dark grayish brown redoximorphic features

38 to 52 inches—gray and dark grayish brown sandy clay that is stratified with loamy sand and has strong brown redoximorphic features

Substratum:

52 to 80 inches—gray and dark grayish brown clay that is stratified with loamy sand and has strong brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Moderately low

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0 to 1 foot

Drainage class: Poorly drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Goldsboro soils, which are moderately well drained
- Ocilla soils, which are moderately well drained and have a surface layer more than 20 inches thick

Similar:

- Coxville and Rembert soils, which have more than 35 percent clay in the control section

- Byars soils, which have more than 35 percent clay in the control section and have a dark surface layer more than 10 inches thick
- Plummer soils, which have a surface layer more than 20 inches thick
- Lynchburg soils, which are better drained than the Ogeechee soil
- Rains soils, which do not have a decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes***Setting***

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Orangeburg soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 7 inches—brown loamy sand

Subsurface layer:

7 to 16 inches—light yellowish brown loamy sand

Subsoil:

16 to 34 inches—yellowish red sandy clay loam

34 to 66 inches—red sandy clay loam

66 to 80 inches—red sandy clay loam that has strong brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low or moderate

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Slight

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and a dense, compacted substratum
- Troup soils, which have sandy surface and subsurface layers more than 40 inches thick

Similar:

- Norfolk soils, which have a subsoil that has yellower hues than that of the Orangeburg soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a moderate hazard of erosion and a 20 percent decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Erosion

Management measures and considerations:

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Well suited

Management concerns: None

Lawns and landscaping

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

OrB—Orangeburg loamy sand, 2 to 6 percent slopes

Setting

Landscape position: Coastal Plain uplands

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Orangeburg soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 7 inches—brown loamy sand

Subsurface layer:

7 to 16 inches—light yellowish brown loamy sand

Subsoil:

16 to 34 inches—yellowish red sandy clay loam

34 to 66 inches—red sandy clay loam

66 to 80 inches—red sandy clay loam that has strong brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low or moderate

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Slight

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ailey and Uchee soils, which have sandy surface and subsurface layers 20 to 40 inches thick and a dense, compacted substratum
- Troup soils, which have sandy surface and subsurface layers more than 40 inches thick

Similar:

- Norfolk soils, which have a subsoil that has yellower hues than that of the Orangeburg soil
- Nankin, Neeses, and deep, red soils that have a clayey subsoil
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Barnwell soils, which have a moderate hazard of erosion and a 20 percent decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Cropland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to control erosion, maintain the content of organic matter and tilth, minimize crusting, and increase soil moisture content.
- Contour farming, stripcropping, terraces, and grassed waterways help to control erosion and runoff on the steeper, longer slopes.

Pasture

Suitability: Well suited

Management concerns: Erosion

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland*Suitability:* Suited*Management concerns:* Erosion*Management measures and considerations:*

- Constructing logging roads on the contour helps to minimize erosion and runoff.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development**Building sites***Suitability:* Well suited*Management concerns:* None**Septic tank absorption fields***Suitability:* Well suited*Management concerns:* None**Lawns and landscaping***Suitability:* Well suited*Management concerns:* Erosion*Management measures and considerations:*

- Constructing terraces, mulching, landscaping on the contour, and planting low, spreading plants help to control erosion.

OsA—Osier loamy sand, 0 to 2 percent slopes, frequently flooded***Setting****Landscape position:* Drainageways, flood plains, and stream terraces*Shape of areas:* Irregular*Size of areas:* 10 to 100 acres***Composition***

Osier soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

0 to 3 inches—very dark brown loamy sand

Substratum:

3 to 42 inches—dark gray loamy sand

42 to 58 inches—light brownish gray coarse sand

58 to 80 inches—light gray coarse sand

Soil Properties and Qualities*Permeability:* Rapid*Available water capacity:* Very low*Organic matter content:* Moderate*Surface runoff:* Very high*Hazard of erosion:* None

Depth to high water table: 0 to 0.5 foot

Drainage class: Poorly drained

Ponding or flooding: Occasional; brief in duration

Minor Components

Dissimilar:

- Foxworth soils, which are better drained than the Osier soil
- Grifton and Rains soils, which are fine-loamy
- Coxville, Meggett, and Rembert soils, which are clayey and have surface layers less than 20 inches thick
- Johnston soils, which have black surface layers more than 10 inches thick

Similar:

- Fluvaquents, which have an irregular decrease in organic matter as depth increases
- Some areas that have mucky surface layers
- Osier soils, which are in drainageways and stream channels and may be less acid than the Osier soil

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness and flooding

Pasture

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Flooding and wetness

Septic tank absorption fields

Suitability: Not suited

Management concerns: Flooding and wetness

Lawns and landscaping*Suitability:* Not suited*Management concerns:* Flooding and wetness**PmA—Plummer loamy sand, 0 to 2 percent slopes*****Setting****Landscape position:* Level to depressional areas and drainageways*Shape of areas:* Irregular and oval*Size of areas:* 10 to 100 acres***Composition***

Plummer soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile*Surface layer:*

2 inches to 0—partially decomposed hardwood leaves and pine needles

0 to 8 inches—black loamy sand

Subsurface layer:

8 to 30 inches—grayish brown sand that has strong brown redoximorphic features and uncoated white sand grains

30 to 50 inches—light gray sand that has strong brown and dark yellowish brown redoximorphic features

Subsoil:

50 to 62 inches—gray fine sandy loam that has brown redoximorphic features

62 to 75 inches—gray sandy clay loam that has light gray redoximorphic features

75 to 80 inches—gray sandy clay loam that has yellowish brown redoximorphic features

Soil Properties and Qualities*Permeability:* Moderate in the subsoil; moderately rapid in the surface and subsurface layers*Available water capacity:* Low*Organic matter content:* Moderate*Surface runoff:* Very high*Hazard of erosion:* None*Depth to high water table:* 0 to 1 foot*Drainage class:* Poorly drained*Ponding or flooding:* None***Minor Components****Dissimilar:*

- Osier soils, which have sandy layers throughout the upper 80 inches
- Rains soils, which have surface layers less than 20 inches thick
- Coxville and Rembert soils, which have surface layers less than 20 inches thick and have a clayey subsoil
- Johnston soils, which have black surface layers more than 10 inches thick and have a coarse loamy to sandy subsoil

Similar:

- Ocilla soils, which are somewhat poorly drained and have sandy surface and subsurface layers 20 to 40 inches thick

- Some areas of Plummer soils that are seasonally flooded or ponded or have surface layers that are only 20 to 40 inches thick

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Not suited

Management concerns: Wetness

Pasture

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Not suited

Management concerns: Wetness

Septic tank absorption fields

Suitability: Not suited

Management concerns: Wetness

Lawns and landscaping

Suitability: Not suited

Management concerns: Wetness

RaA—Rains fine sandy loam, 0 to 2 percent slopes

Setting

Landscape position: Shallow depressions and drainageways

Shape of areas: Irregular and oval

Size of areas: 5 to 200 acres

Composition

Rains soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 8 inches—black fine sandy loam

Subsurface layer:

8 to 12 inches—dark gray loamy sand

Subsoil:

12 to 36 inches—gray sandy clay loam that has yellowish brown redoximorphic features

36 to 47 inches—gray sandy clay that has strong brown and red redoximorphic features

47 to 63 inches—gray sandy clay that has yellowish red and red redoximorphic features

Substratum:

63 to 80 inches—light gray and gray sandy clay that has red and brownish yellow redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Moderate

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0 to 1 foot

Drainage class: Poorly drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Goldsboro soils, which are moderately well drained
- Ocilla soils, which are moderately well drained and have a surface layer more than 20 inches thick

Similar:

- Coxville and Rembert soils, which have more than 35 percent clay in the control section
- Byars soils, which have a dark surface layer more than 10 inches thick
- Plummer soils, which have a surface layer more than 40 inches thick
- Ogeechee soils, which have a decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Poorly suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.

RmA—Rembert sandy loam, 0 to 2 percent slopes

Setting

Landscape position: Depressions and drainageways

Shape of areas: Oval and irregular

Size of areas: 10 to 300 acres

Composition

Rembert soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 7 inches—very dark gray sandy clay loam

Subsurface layer:

7 to 13 inches—dark grayish brown loam that has brown redoximorphic features

Subsoil:

13 to 40 inches—dark gray clay that has brown redoximorphic features

40 to 51 inches—gray sandy clay that has light gray and yellowish brown redoximorphic features

51 to 63 inches—gray coarse sandy loam that has yellowish brown redoximorphic features

Substratum:

63 to 70 inches—gray loamy coarse sand

70 to 80 inches—light gray coarse sand

Soil Properties and Qualities

Permeability: Moderately slow

Available water capacity: Moderate

Organic matter content: Moderate

Surface runoff: Negligible

Hazard of erosion: None

High water table: 1 foot above the surface to 1 foot below

Drainage class: Poorly drained

Ponding or flooding: Occasional

Minor Components

Dissimilar:

- Plummer soils, which have sandy surface and subsurface layers more than 20 inches thick and have 18 to 35 percent clay in the subsoil
- Johnston soils, which have black surface layers more than 10 inches thick and have a sandy subsoil

Similar:

- Byars soils, which have a black surface layer more than 10 inches thick and do not have a decrease in clay content of more than 20 percent within a depth of 60 inches
- McColl soils, which are episaturated with a dense, bright-colored subsoil horizon between depths of 18 and 36 inches
- Ogeechee soils, which have 20 to 35 percent clay in the subsoil
- Rains soils, which have 20 to 35 percent clay in the subsoil and do not have a decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites***Suitability:* Not suited*Management concerns:* Ponding**Septic tank absorption fields***Suitability:* Not suited*Management concerns:* Ponding**Lawns and landscaping***Suitability:* Not suited*Management concerns:* Ponding**SeA—Seagate sand, 0 to 2 percent slopes*****Setting****Landscape position:* Nearly level areas and rims of Carolina bays*Shape of areas:* Irregular *Size of areas:* 10 to 50 acres***Composition***

Seagate soil and similar soils: 75 to 85 percent

Dissimilar soils: 15 to 25 percent

Typical Profile*Surface layer:*

0 to 6 inches—very dark gray sand

Subsurface layer:

6 to 9 inches—grayish brown sand that has uncoated white sand grains

Subsoil:

9 to 16 inches—black sand

16 to 25 inches—grayish brown sand that has brown organic stains

25 to 30 inches—light brownish gray sand that has strong brown redoximorphic features

30 to 38 inches—gray sandy clay loam that has yellowish red and pale brown redoximorphic features

38 to 48 inches—gray sandy clay loam that has pockets of stripped sand and yellowish brown and brown redoximorphic features

Substratum:

48 to 68 inches—gray sandy loam that has stratified layers of brown sand and has pale brown redoximorphic features

68 to 80 inches—gray sandy clay loam that has stratified layers of brown sand and has pale brown redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Very low

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 1.5 to 2.5 feet

Drainage class: Somewhat poorly drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Rains and Plummer soils, which are more poorly drained than the Seagate soil and do not have spodic horizons
- Ocilla and Albany soils, which do not have spodic horizons

Similar:

- Echaw soils, which are better drained than the Seagate soil and have a deeper spodic horizon
- Some areas of soils in which spodic horizons are mixed with surface horizons because of agricultural and silvicultural practices

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Surface and subsurface drainage systems help to lower the high water table.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Wetness and poor filtering capacity

Management measures and considerations:

- Where adequate outlets are available, surface and subsurface drainage systems can help to lower the high water table.
- Enlarging the absorption field or adding a cap over the filter fields helps to prevent the surfacing of effluent.

Lawns and landscaping

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

TrB—Troup sand, 0 to 6 percent slopes

Setting

Landscape position: Uplands and side slopes

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Troup soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 5 inches—brown sand

Subsurface layer:

5 to 34 inches—very pale brown sand that has light gray uncoated sand grains

34 to 52 inches—very pale brown sand that has brownish yellow redoximorphic features

52 to 57 inches—strong brown loamy sand that has brownish yellow redoximorphic features

Subsoil:

57 to 66 inches—strong brown sandy clay loam

66 to 80 inches—yellowish brown and red sandy clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components*Dissimilar:*

- Norfolk, Orangeburg, Nankin, and Barnwell soils, which have surface and subsurface layers less than 20 inches thick
- Alaga soils, which are sandy throughout the upper 80 inches

Similar:

- Uchee, Ailey, Wagram, and Lucy soils, which have surface and subsurface layers 20 to 40 inches thick
- Blanton soils, which are moderately well drained

Use and Management

Major uses: Pasture

Agricultural Development**Cropland**

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: None

Septic tank absorption fields

Suitability: Well suited

Management concerns: None

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

TrC—Troup sand, 6 to 10 percent slopes

Setting

Landscape position: Uplands and side slopes

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Troup soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 5 inches—brown sand

Subsurface layer:

5 to 34 inches—very pale brown sand that has light gray uncoated sand grains

34 to 52 inches—very pale brown sand that has brownish yellow redoximorphic features

52 to 57 inches—strong brown loamy sand that has brownish yellow redoximorphic features

Subsoil:

57 to 66 inches—strong brown sandy clay loam

66 to 80 inches—yellowish brown and red sandy clay loam

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Low

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Norfolk, Orangeburg, Nankin, and Barnwell soils, which have surface and subsurface layers less than 20 inches thick

- Alaga soils, which are sandy throughout the upper 80 inches

Similar:

- Uchee, Ailey, Wagram, and Lucy soils, which have surface and subsurface layers 20 to 40 inches thick
- Blanton soils, which are moderately well drained
- Some areas that have slopes of 10 to more than 25 percent, especially near drainageways

Use and Management

Major uses: Pasture

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizers help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Planting seedlings that can tolerate dry conditions helps to improve stand densities.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Suited

Management concerns: Slope

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

UcB—Uchee sand, 2 to 6 percent slopes

Setting

Landscape position: Slopes adjacent to drainageways

Shape of areas: Irregular

Size of areas: 10 to 50 acres

Composition

Uchee soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 3 inches—brown sand

Subsurface layer:

3 to 14 inches—light yellowish brown sand

14 to 24 inches—yellow sand

Subsoil:

24 to 42 inches—strong brown sandy clay loam

42 to 51 inches—strong brown sandy clay loam that has red and yellow redoximorphic features

51 to 55 inches—strong brown, yellowish brown, and dark red sandy clay loam

55 to 65 inches—strong brown, yellowish brown, and dark red sandy clay loam that has light brownish gray redoximorphic features

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Low

Organic matter content: Low

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga soils, which have sandy layers to a depth of 80 inches
- Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Troup soils, which have sandy surface and subsurface layers more than 40 inches thick and have low-activity clays
- Ocilla soils, which are more poorly drained than the Uchee soil

Similar:

- Ailey soils, which have low-activity clays and tend to occur above elevations of 170 feet on the Coharie and Brandywine Terraces
- Bonneau and Wagram soils, which are on the more gentle slopes and do not have a decrease in clay content within a depth of 60 inches
- Barnwell soils, which have sandy surface layers less than 20 inches thick
- Neeses and Nankin soils, which have sandy surface layers less than 20 inches thick and have more than 35 percent clay in the control section

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: None

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

UcC—Uchee sand, 6 to 10 percent slopes

Setting

Landscape position: Slopes adjacent to drainageways

Shape of areas: Irregular

Size of areas: 10 to 50 acres

Composition

Uchee soil and similar soils: 90 to 95 percent

Dissimilar soils: 5 to 10 percent

Typical Profile

Surface layer:

0 to 3 inches—brown sand

Subsurface layer:

3 to 14 inches—light yellowish brown sand

14 to 24 inches—yellow sand

Subsoil:

24 to 42 inches—strong brown sandy clay loam

42 to 51 inches—strong brown sandy clay loam that has red and yellow redoximorphic features

51 to 55 inches—strong brown, yellowish brown, and dark red sandy clay loam

55 to 65 inches—strong brown, yellowish brown, and dark red sandy clay loam that has light brownish gray redoximorphic features

Soil Properties and Qualities

Permeability: Slow

Available water capacity: Low

Organic matter content: Low

Surface runoff: Low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Alaga soils, which have sandy layers to a depth of 80 inches
- Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Troup soils, which have sandy surface and subsurface layers more than 40 inches thick and have low-activity clays
- Ocilla soils, which are more poorly drained than the Uchee soil

Similar:

- Ailey soils, which have low-activity clays and tend to occur above elevations of 170 feet on the Coharie and Brandywine Terraces
- Bonneau and Wagram soils, which are on the more gentle slopes and do not have a decrease in clay content within a depth of 60 inches
- Barnwell soils, which have sandy surface layers less than 20 inches thick
- Neeses and Nankin soils, which have sandy surface layers less than 20 inches thick and have more than 35 percent clay in the control section
- Some areas that have slopes of 10 to more than 25 percent

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Poorly suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during dry periods also helps to improve forage quality.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Poorly suited

Management concerns: Slow permeability and slope

Management measures and considerations:

- Enlarging the absorption field or using low-pressure pumping systems helps to reduce the permeability limitation.

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

Ud—Udorthents

This map unit is highly variable. Onsite investigation is needed to determine the capabilities and properties of its soils in a specific area.

W—Water

This map unit includes ponds and rivers. No interpretations are given for this map unit.

WgB—Wagram sand, 2 to 6 percent slopes

Setting

Landscape position: Uplands and side slopes

Shape of areas: Irregular

Size of areas: 10 to 100 acres

Composition

Wagram soil and similar soils: 80 to 90 percent

Dissimilar soils: 10 to 20 percent

Typical Profile

Surface layer:

0 to 9 inches—brown sand

Subsurface layer:

9 to 27 inches—very pale brown sand that has light gray redoximorphic features

27 to 33 inches—very pale brown sand that has yellowish brown and light gray redoximorphic features

Subsoil:

33 to 44 inches—strong brown sandy clay loam that has red redoximorphic features

44 to 61 inches—reddish yellow sandy clay loam

61 to 74 inches—reddish yellow sandy clay loam that has red and very pale brown redoximorphic features

74 to 80 inches—reddish yellow sandy clay loam that has red, brownish yellow, very pale brown, and light gray redoximorphic features

Soil Properties and Qualities

Permeability: Moderate

Available water capacity: Very low

Organic matter content: Moderate

Surface runoff: Very low

Hazard of erosion: Moderate

Depth to high water table: More than 6.0 feet

Drainage class: Well drained

Ponding or flooding: None

Minor Components

Dissimilar:

- Ocilla soils, which are somewhat poorly drained
- Nankin and Neeses soils, which have a clayey subsoil and have surface layers less than 20 inches thick

Similar:

- Bonneau soils, which have a water table within a depth of 60 inches
- Lucy soils, which have redder hues than the Wagram soil
- Troup and Blanton soils, which have surface and subsurface layers more than 40 inches thick
- Orangeburg and Norfolk soils, which have surface layers less than 20 inches thick
- Ailey and Uchee soils, which have a dense substratum and have a more than 20 percent decrease in clay content within a depth of 60 inches

Use and Management

Major uses: Pasture

Agricultural Development

Cropland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Conservation tillage and cropping systems that include legumes and winter cover crops help to maintain the content of organic matter, minimize crusting, increase soil moisture content, and prevent soil blowing.
- Split applications of fertilizer help to improve the low nutrient-holding capacity.

Pasture

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Planting seedlings in furrows helps to increase seedling survival rates.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.

Homesite and Urban Development

Building sites

Suitability: Well suited

Management concerns: Slope

Septic tank absorption fields

Suitability: Suited

Management concerns: Percs slowly

Lawns and landscaping

Suitability: Suited

Management concerns: Low available water capacity

Management measures and considerations:

- Irrigation, mulching, and planting drought-tolerant species help to reduce limitations caused by the low available water capacity.

WhA—Wahee loamy sand, 0 to 2 percent slopes

Setting

Landscape position: Stream terraces

Shape of areas: Irregular

Size of areas: 10 to 200 acres

Composition

Wahee soil and similar soils: 85 to 95 percent

Dissimilar soils: 5 to 15 percent

Typical Profile

Surface layer:

0 to 6 inches—very dark grayish brown loamy sand

Subsurface layer:

6 to 9 inches—light yellowish brown coarse loamy sand

Subsoil:

9 to 13 inches—pale brown sandy clay that has gray and strong brown redoximorphic features

13 to 21 inches—gray clay that has light yellowish brown and strong brown redoximorphic features

21 to 33 inches—gray clay that has olive brown and strong brown redoximorphic features

33 to 44 inches—gray clay that has dark grayish brown and strong brown redoximorphic features

44 to 50 inches—gray sandy loam

Substratum:

50 to 80 inches—pale yellow coarse sand

Soil Properties and Qualities

Permeability: Slow

Available water capacity: High

Organic matter content: Moderate

Surface runoff: Very high

Hazard of erosion: None

Depth to high water table: 0.5 foot to 1.5 feet

Drainage class: Somewhat poorly drained

Ponding or flooding: Rare; brief in duration

Minor Components

Dissimilar:

- Johns and Eunola soils, which are better drained than the Wahee soil and have less clay
- Foxworth soils, which are sandy throughout the upper 80 inches

Similar:

- Rembert soils, which are more poorly drained than the Wahee soil
- Meggett soils, which are more poorly drained than the Wahee soil and less acid
- Some areas of soils that have sandy layers within a depth of 40 inches

Use and Management

Major uses: Woodland

Agricultural Development

Cropland

Suitability: Well suited

Management concerns: Wetness

Management measures and considerations:

- Surface drainage systems and landshaping help to remove surface water.
- Minimizing traffic on wet soils helps to prevent soil compaction and improve soil structure.

Pasture

Suitability: Suited

Management concerns: Wetness

Management measures and considerations:

- Maintaining mixtures of grasses and legumes, proper stocking rates, pasture rotation, and applications of lime and fertilizers help to improve forage quality.
- Deferred grazing during wet periods helps to reduce soil compaction and improve soil structure.

Woodland*Suitability:* Suited*Management concerns:* Wetness*Management measures and considerations:*

- Using equipment with wide, low-pressure tires helps to increase equipment mobility and prevent soil compaction and rutting.
- Planting and harvesting trees during dry periods helps to reduce the wetness limitation.
- Chopping and harrowing help to reduce plant competition and increase seedling survival rates.
- Seedling survival rates can also be improved by planting on raised beds.

Homesite and Urban Development**Building sites***Suitability:* Poorly suited*Management concerns:* Flooding and wetness*Management measures and considerations:*

- Installing surface drainage systems, adding fill material, and landshaping help to reduce wetness limitations in areas around buildings.

Septic tank absorption fields*Suitability:* Poorly suited*Management concerns:* Flooding, wetness, and permeability*Management measures and considerations:*

- Specially designed systems can be installed, or effluent can be pumped to a better suited site.

Lawns and landscaping*Suitability:* Poorly suited*Management concerns:* Flooding and wetness*Management measures and considerations:*

- Surface drainage systems and landshaping help to remove surface water.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Generally, the soils in Bamberg County that are well suited to crops are also well suited to urban uses. The data concerning specific soils in the county can be used in planning future land use patterns. The potential for farming should be considered relative to any soil limitations and the potential for nonfarm development.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils are identified, the system of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units" and in the tables. Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Federal and State regulations require that any areas designated as wetlands cannot be altered without prior approval. Contact the local office of the Natural Resources Conservation Service for identification of hydric soils and potential wetlands.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in [table 5](#). In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

A high level of management includes maintaining proper soil reaction and fertility levels as indicated by standard soil tests. The application rate of nitrogen for corn on soils that have a yield potential of 125 to 150 bushels per acre should be 140 to 160 pounds per acre. If the yield potential for corn is 100 bushels per acre or less, a rate of 100 to 120 pounds of nitrogen per acre should be used. The application of nitrogen in excess of that required for potential yields generally is not recommended. The excess nitrogen fertilizer that is not utilized by the crop is an unnecessary expense and causes a hazard of water pollution. If corn or cotton is grown after the harvest of soybeans or peanuts, nitrogen rates can be reduced by about 20 to 30 pounds per acre. Because nitrogen can be readily leached from sandy soils, applications may be needed on these soils more than once during the growing season.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals 1 through 8. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a capital letter, *E*, *W*, *S*, or *C*, to the class numeral, for example, 2E. The letter *E* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *W* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *S* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *C*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *W*, *S*, or *C* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the country has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in [table 6](#). This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures used to overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Woodland Management and Productivity

[Table 7](#) can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excess water in or on the soil; *T*, toxic substances in the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; *F*, a high content of rock fragments in the soil; *L*, low strength; and *N*, snowpack. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, F, L, and N.

In table 7, *slight*, *moderate*, and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and a *productivity class*. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *productivity class*, a number, represents the yield likely to be produced by the most important trees. This number, expressed as cubic meters per hectare per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to plant are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in [table 8](#) according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability

of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the period of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat. The ratings in table 9 are intended to be used as a guide and are not site specific. Onsite investigation is needed for individual management plans.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be

expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns, landscaping, and golf fairways. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm, dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the high water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table, depth to bedrock, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns, landscaping, and golf fairways require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established. Soil tests are essential to determine liming and fertilizer needs. Help in making soil tests or in deciding what soil additive, if any, should be used can be obtained from the office of the Bamberg Soil and Water Conservation District or the local office of the Cooperative Extension Service.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the

indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. The animal waste lagoons commonly used in farming operations are not considered in the ratings. They are generally deeper than the lagoons referred to in the table and rely on anaerobic bacteria to decompose waste materials.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope or bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the high water table is more than 3 feet. Soils rated *fair* have more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the high water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many

stones, or slopes of more than 25 percent. They are wet and have a high water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale, siltstone, and weathered granite saprolite, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a high water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a high water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area. Ponds that are less than about 2 acres in size are not shown on the maps because of the scale of mapping.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, mica, or salts or sodium. Depth to a high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement, permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, susceptibility to flooding, subsidence of organic layers, and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Drainage may be a major management consideration in some areas. Management of drainage in conformance with regulations concerning wetlands may require special permits and extra planning. The local office of the Natural Resources Conservation Service should be contacted for identification of hydric soils and potential wetlands.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a high water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the availability of suitable irrigation water, the depth of the root zone, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of soil blowing, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Tables 14 and 15 give estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

In table 14, *texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages, by weight, of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, by volume, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil

that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

In [table 15](#), *rock fragments* larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

[Table 16](#) shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $1/3$ -bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They

are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time. It is the difference between the amount of soil water at field moisture capacity and the amount at wilting point.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, more than 6 percent; and *very high*, more than 9 percent.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.64. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing. The soils assigned to group 1 are the most susceptible to soil blowing, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.
- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to soil blowing because of coarse fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 17 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep or very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep to very deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in table 17, the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 17 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year);

occasional that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of flooding is more than 50 percent in any year). *Common* is used when occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in table 17 are the depth to the high water table; the kind of water table—that is, *perched* or *apparent*; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 17.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone. An *artesian* water table is under hydrostatic head, generally below an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.

Two numbers in the column showing depth to the high water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 17 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors. Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (4). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisols.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid climate, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Paleudults (*Pale*, meaning well developed, plus *udult*, the suborder of the Ultisols that occurs in humid climates).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Paleudults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, thermic Typic Paleudults.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The location of the typical pedon is also described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (5). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (4). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Ailey Series

Landform: Gently rolling and undulating slopes of the Coastal Plain

Parent material: Sandy and loamy marine sediments

Slope range: 2 to 10 percent

Associated Soils

- Autryville soils, which have a second E and B horizon
- Lucy soils, which do not have densic materials
- Uchee soils, which do not have low-activity clays in the subsoil

Taxonomic Classification

Loamy, siliceous, thermic Arenic Kanhapludults

Typical Pedon

Ailey coarse sand, 2 to 6 percent slopes; from Bamberg, 11.7 miles northwest on S.C. Highway 49, about 2,112 feet on the northwest side of S.C. Highway 49; elevation of 250 feet.

- Ap—0 to 7 inches; brown (10YR 5/3) coarse sand; single grain; loose; few fine roots; moderately acid; clear smooth boundary.
- E1—7 to 27 inches; very pale brown (10YR 7/4) coarse sand; single grain; loose; few fine roots; moderately acid; clear wavy boundary.
- E2—27 to 31 inches; brownish yellow (10YR 6/6) coarse sand; single grain; loose; few fine roots; moderately acid; clear wavy boundary.
- Bt1—31 to 41 inches; yellowish brown (10YR 5/8) coarse sandy loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few small quartz pebbles; strongly acid; gradual wavy boundary.
- Bt2—41 to 47 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine pores; common medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.
- Btx—47 to 65 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, firm in place; few brittle peds; many medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; common medium distinct light gray (10YR 7/2) irregularly shaped iron depletions with sharp boundaries in the matrix; strongly acid; gradual wavy boundary.
- BC1—65 to 75 inches; light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/8) sandy clay that has strata of coarse sand; weak medium subangular blocky structure; friable, firm in place; few brittle peds; few quartz pebbles; common white (10YR 8/1) pockets of kaolin clay; red (10R 4/8) firm masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

BC2—75 to 80 inches; brownish yellow (10YR 6/8) and reddish yellow (7.5YR 6/8) sandy clay; weak medium subangular blocky structure; very friable; common small and medium quartz pebbles; many white (10YR 8/1) pockets of kaolin clay; many medium prominent red (10R 4/8) firm masses of oxidized iron with clear boundaries in the matrix; strongly acid.

Range in Characteristics

Thickness of solum: 40 to 60 inches

Reaction: Very strongly acid to slightly acid in the A, Ap, E, Bt, Btx, and BC horizons; very strongly acid or strongly acid in the C horizon

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3

Texture—loamy sand, loamy coarse sand, sand, or coarse sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—loamy sand, loamy coarse sand, sand, or coarse sand

Bt horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture—sandy loam, coarse sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red and brown

Btx horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture—sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red and brown; iron depletions in shades of brown, white, and gray

BC horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture—sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red and brown; iron depletions in shades of brown, white, and gray

C horizon (where present):

Color—hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 4 to 8

Texture—coarse sandy loam, sandy loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red and brown; iron depletions in shades of brown, white, and gray

Alaga Series

Landform: Coastal Plain uplands

Parent material: Sandy marine sediments

Slope range: 0 to 6 percent

Associated Soils

- Foxworth soils, which have less than 10 percent silt plus clay in the 10- to 40-inch control section
- Echaw soils, which have spodic horizons
- Lucy soils, which have argillic horizons

Taxonomic Classification

Thermic, coated Typic Quartzipsamments

Typical Pedon

Alaga coarse sand, 0 to 6 percent slopes; 0.8 mile east of the intersection of U.S. Highways 301 and 78 in Bamberg to S.C. Highway 362, about 5.9 miles south on S.C. Highway 362 to County Road 81, about 0.4 mile west to County Road 541, about 1 mile south to a field road, 2,000 feet southeast of County Road 541 and 100 feet west of a field boundary of planted pines; elevation of 123 feet.

- A—0 to 5 inches; brown (7.5YR 4/4) coarse sand; single grain; loose; common fine and very fine and few medium roots; very strongly acid; clear wavy boundary.
 C1—5 to 30 inches; yellowish red (5YR 5/6) coarse sand; single grain; loose; common fine and few medium roots; very strongly acid; gradual wavy boundary.
 C2—30 to 57 inches; yellowish red (5YR 5/8) coarse sand; single grain; loose; very strongly acid; gradual wavy boundary.
 C3—57 to 80 inches; brownish yellow (10YR 6/6) coarse sand; single grain; loose; strongly acid.

Range in Characteristics

Thickness of sands: More than 80 inches

Reaction: Extremely acid to moderately acid, except where lime has been applied

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4

Texture—coarse sand, sand, fine sand, loamy sand, or loamy fine sand

C horizon:

Color—hue of 5YR to 10YR, value of 4 to 8, and chroma of 3 to 8; uncoated sand has chroma of 1 or 2

Texture—coarse sand, sand, fine sand, loamy sand, or loamy fine sand

Note: The Alaga soils in Bamberg County have a C horizon that ranges in hue to 5YR, which is outside the Range in Characteristics for the series. This difference, however, does not significantly affect classification or the use and management of the soils.

Albany Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Blanton soils, which have a seasonal high water table at a depth of 40 to 72 inches
- Bonneau soils, which have a seasonal high water table below about 40 inches and have sandy surface layers less than 40 inches thick
- Ocilla soils, which have sandy surface layers 20 to 40 inches thick

Taxonomic Classification

Loamy, siliceous, thermic Grossarenic Paleudults

Typical Pedon

Albany sand, 0 to 2 percent slopes; 2.2 miles southeast on U.S. Highway 78 from the intersection of U.S. Highways 301 and 78 in Bamberg, 0.1 mile south on a logging road, 150 feet north of the road; elevation of 155 feet.

- Ap—0 to 6 inches; very dark gray (10YR 3/1) sand; weak fine subangular blocky structure; very friable; common fine and very fine roots; moderately acid; abrupt smooth boundary.
- E1—6 to 11 inches; yellowish brown (10YR 5/6) sand; single grain; loose; common uncoated sand grains; few very fine roots; strongly acid; smooth wavy boundary.
- E2—11 to 22 inches; light yellowish brown (2.5Y 6/4) sand; single grain; loose; strongly acid; clear wavy boundary.
- E3—22 to 44 inches; light gray (2.5Y 7/2) sand; single grain; loose; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; moderately acid; clear wavy boundary.
- Btg1—44 to 52 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; very few faint clay films on faces of peds; few medium prominent yellowish brown (10YR 5/8) masses of oxidized iron with clear boundaries in the matrix; common medium distinct brown (10YR 4/3) accumulations; strongly acid; gradual wavy boundary.
- Btg2—52 to 73 inches; gray (10YR 5/1) sandy clay loam; weak coarse subangular blocky structure; firm; very few faint clay films on faces of peds; common medium prominent light olive brown (2.5Y 5/4) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid; gradual wavy boundary.
- Cg—73 to 80 inches; dark gray (2.5Y 4/1) clay; massive; very firm; few fine prominent yellowish brown (10YR 5/4) masses of oxidized iron with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: More than 70 inches

Reaction: Extremely acid to moderately acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR to 5Y, value of 2 to 6, and chroma of 1 or 2

Texture—sand, loamy fine sand, fine sand, or loamy sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 to 8

Texture—loamy sand, loamy fine sand, sand, or fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and gray; iron depletions are typically zones of uncoated sand grains.

Bt horizon (where present):

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, or fine sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and gray

Btg horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 or 2

Texture—sandy clay loam, sandy loam, fine sandy loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and gray

Cg horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, sandy clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and gray

Autryville Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 6 percent

Associated Soils

- Ailey soils, which do not have a second E and B horizon
- Bonneau soils, which do not have bisectal profiles
- Lucy soils, which are not bisectal and do not have gray depletions

Taxonomic Classification

Loamy, siliceous, thermic Arenic Paleudults

Typical Pedon

Autryville sand, 0 to 6 percent slopes; from Bamberg, 13.2 miles southeast on U.S. Highway 301 to S.C. Highway 64, about 3.1 miles northwest on S.C. Highway 64 to County Road 27, about 1.4 miles south on the road, 1,300 feet west on a field road, 250 feet north of the field road; elevation of 175 feet.

A—0 to 8 inches; brown (10YR 5/3) sand; weak very fine granular structure; very friable; common fine and medium roots; very strongly acid; abrupt wavy boundary.

E—8 to 24 inches; light yellowish brown (2.5Y 6/4) sand; single grain; loose; few very fine and fine roots; very strongly acid; clear wavy boundary.

Bt—24 to 42 inches; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged by clay; few fine and medium roots; strongly acid; clear wavy boundary.

E'—42 to 63 inches; yellowish brown (10YR 5/6) sand; single grain; loose; few fine roots; strongly acid; clear wavy boundary.

B't—63 to 72 inches; olive yellow (2.5Y 6/6) sandy clay loam; weak medium subangular blocky structure; friable; sand grains coated and bridged by clay; few fine roots; many medium prominent reddish yellow (7.5YR 7/8) masses of oxidized iron with clear boundaries in the matrix; common medium prominent light gray (2.5Y 7/1) irregularly shaped iron depletions with clear boundaries in the matrix; strongly acid; clear wavy boundary.

B'tg—72 to 80 inches; light gray (10YR 7/1) sandy clay loam; weak medium subangular blocky structure; friable; common clay films on faces of peds; many medium prominent red (2.5YR 4/8) and common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Strongly acid or very strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 3

Texture—loamy sand, loamy fine sand, fine sand, or sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 6

Texture—loamy sand, loamy fine sand, sand, or fine sand

Bt horizon:

Color—hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—sandy clay loam, sandy loam, or fine sandy loam

E' horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 to 8

Texture—sand, fine sand, loamy sand, or loamy fine sand

B't horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—loamy fine sand, sandy loam, fine sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, olive, and gray

B'tg horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture—loamy fine sand, sandy loam, fine sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, olive, and gray

Barnwell Series

Landform: Coastal Plain uplands

Parent material: Loamy fluvial and marine sediments

Slope range: 2 to 10 percent

Associated Soils

- Ailey soils, which have arenic epipedons and fragic properties within the Bt horizons
- Bonneau soils, which have arenic epipedons and lack densic materials
- Orangeburg soils, which have pallic clay distribution and lack densic materials

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Kanhapludults

Typical Pedon

Barnwell loamy sand, 2 to 6 percent slopes; about 4.0 miles north of Denmark on U.S. Highway 321, about 4.2 miles west on S.C. Highway 49, about 200 feet south of S.C. Highway 49.

Ap—0 to 8 inches; pale brown (10YR 6/3) loamy sand; weak medium granular structure; very friable; few fine roots; few small and medium ironstone concretions (less than 5 percent); moderately acid; clear smooth boundary.

Bt1—8 to 25 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few faint clay films on faces of peds and along old root channels; few medium ironstone concretions (less than 5 percent); strongly acid; gradual wavy boundary.

Bt2—25 to 45 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few faint clay films on faces of peds; common medium distinct yellowish red (5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; few small and medium ironstone concretions and small quartz pebbles (less than 10 percent); strongly acid; gradual wavy boundary.

BCd1—45 to 53 inches; yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) sandy clay; weak medium subangular blocky structure; dense; friable, firm in place; common fine streaks of loamy sand; common coarse prominent red (2.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; common very

pale brown (10YR 8/2) pockets of kaolin clay; strongly acid; gradual wavy boundary.

BCd2—53 to 75 inches; 35 percent very pale brown (10YR 7/3), 35 percent yellowish brown (10YR 5/8), and 30 percent strong brown (7.5YR 5/8) sandy clay loam that has strata of sandy loam; moderate medium subangular blocky structure; dense; friable, firm in place; common medium prominent red (10R 4/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: 40 to 75 inches

Reaction: Extremely acid to strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4

Texture—fine sandy loam, sandy loam, loamy sand, loamy coarse sand, or sand in the fine-earth fraction

Bt horizon (upper part):

Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 4 to 8

Texture—sandy clay loam or sandy loam

Bt horizon (lower part):

Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 2 to 8; chroma of 2 below a depth of 36 inches

Texture—sandy clay loam, sandy loam, or sandy clay that is firm and dense

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray below 40 inches

BCd horizon:

Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 3 to 8

Texture—sandy loam, loamy sand, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray below 40 inches

C horizon:

Color—hue of 2.5YR to 5Y, value of 3 to 8, and chroma of 3 to 8

Texture—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, sandy clay loam, clay loam, or clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray below 40 inches

Blanton Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 10 percent

Associated Soils

- Alaga soils, which are sandy throughout the profile and do not have a water table within 6 feet
- Albany soils, which are somewhat poorly drained
- Norfolk soils, which have a Bt horizon within 20 inches of the surface

Taxonomic Classification

Loamy, siliceous, thermic Grossarenic Paleudults

Typical Pedon

Blanton sand, 2 to 6 percent slopes; 0.8 mile east of the intersection of U.S. Highways 301 and 78 in Bamberg to S.C. Highway 362, about 5.9 miles south on S.C. Highway 362 to County Road 81, about 0.4 mile west on County Road 81 to County Road 541, about 800 feet south on County Road 541 to a field road, 250 feet east of County Road 541 and 100 feet north of the field road; elevation of 132 feet.

Ap—0 to 5 inches; yellowish brown (10YR 5/4) sand; single grain; loose; few fine roots; very strongly acid; clear wavy boundary.

E1—5 to 19 inches; brownish yellow (10YR 6/6) coarse sand; single grain; loose; few fine roots; very strongly acid; gradual wavy boundary.

E2—19 to 44 inches; very pale brown (10YR 7/4) coarse sand; single grain; loose; few fine roots; very strongly acid; clear wavy boundary.

Bt—44 to 63 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; very few distinct clay films on faces of peds; few fine roots; common medium prominent gray (10YR 6/1) irregularly shaped iron depletions with clear boundaries in the matrix; many coarse prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

C—63 to 80 inches; strong brown (7.5YR 5/6), red (2.5YR 4/6), and light brownish gray (10YR 6/2) sandy clay loam; massive; firm; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Moderately acid to very strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 7, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, fine sand, coarse sand, or sand

E horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 1 to 8

Texture—loamy sand, loamy fine sand, fine sand, coarse sand, or sand

BE horizon (where present):

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—loamy sand, loamy fine sand, loamy coarse sand, or sandy loam

Bt horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—loamy sand, loamy fine sand, loamy coarse sand, sandy loam, fine sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of white and gray occur in the upper 10 inches of most pedons

Btg horizon (where present):

Color—hue of 5Y to 7.5YR, value of 5 to 8, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of white and gray

C horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—sandy loam, fine sandy loam, sandy clay loam, and sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of white and gray

Note: The Blanton soils in Bamberg County are considered taxadjuncts to the series because they meet the criteria for a kandic horizon. This difference, however, does not significantly affect the use and management of the soils.

Bonneau Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 6 percent

Associated Soils

- Autryville soils, which are bisectal
- Blanton soils, which have a sandy epipedon more than 40 inches thick
- Goldsboro soils, which do not have an arenic surface and have iron depletions of chroma 2 or less within 30 inches of the surface

Taxonomic Classification

Loamy, siliceous, thermic Arenic Paleudults

Typical Pedon

Bonneau sand, 0 to 2 percent slopes; from Bamberg, 13.2 miles southeast on U.S. Highway 301 to S.C. Highway 64, about 3.1 miles northwest on S.C. Highway 64 to County Road 27, about 1.4 miles south on the county road to a field, 1,300 feet west on the field road, 250 feet north of the road; elevation of 175 feet.

A—0 to 6 inches; brown (10YR 4/3) sand; single grain; loose; common fine and few medium roots; few ironstone nodules on surface (less than 1 percent); very strongly acid; clear smooth boundary.

E—6 to 26 inches; light yellowish brown (10YR 6/4) sand; single grain; loose; common fine and few medium roots; very strongly acid; clear smooth boundary.

Bt1—26 to 37 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few plinthite nodules (less than 1 percent); few fine prominent red (2.5YR 4/8) and common medium distinct strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Bt2—37 to 41 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few plinthite nodules (less than 3 percent); common medium prominent red (2.5YR 4/8) and few fine distinct strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Bt3—41 to 52 inches; yellowish brown (10YR 5/6) sandy clay; moderate medium subangular blocky structure; firm; few fine roots; few plinthite nodules (less than 3 percent); common fine prominent red (2.5YR 4/8) and few fine distinct strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; common medium prominent light brownish gray (10YR 6/2) irregularly shaped iron depletions with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Bt4—52 to 66 inches; strong brown (7.5YR 5/8) and red (2.5YR 4/8) sandy clay; weak medium subangular blocky structure; friable; few plinthite nodules (less than 3 percent); many medium prominent light brownish gray (10YR 6/2) irregularly

shaped iron depletions with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

BC—66 to 80 inches; strong brown (7.5YR 5/8) and yellowish red (2.5YR 4/6) sandy clay that is stratified with lenses of sand; weak coarse subangular blocky structure in sandy clay part; massive in lenses of sand; friable; many coarse prominent light brownish gray (10YR 6/2) irregularly shaped iron depletions with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Strongly acid or very strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, fine sand, or sand

E horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 2 to 6

Texture—loamy sand, loamy fine sand, sand, or fine sand

Bt horizon (upper part):

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, or fine sandy loam

Bt horizon (lower part):

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—sandy clay loam or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of brown, olive, and gray; iron depletions with chroma of 2 or less are within a depth of 60 inches

Btg horizon (where present):

Color—hue of 10YR, value of 4 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of brown, olive, and gray

BC horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—sandy loam, fine sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of brown, olive, and gray

Note: The Bonneau soils in Bamberg County are considered taxadjuncts to the series because they meet the criteria for a kandic horizon. This difference, however, does not significantly affect the use and management of the soils.

Byars Series

Landform: Depressions and Carolina bays

Parent material: Clayey marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Coxville soils, which have a lighter-colored surface horizon than the Byars soils
- Lynchburg soils, which are somewhat poorly drained

- Rains soils, which have less clay in the subsoil than the Byars soils

Taxonomic Classification

Fine, kaolinitic, thermic Umbric Paleaquults

Typical Pedon

Byars loam, 0 to 2 percent slopes; from Bamberg, 13.4 miles southwest on U.S. Highway 301 to S.C. Highway 64, about 5.2 miles southeast on S.C. Highway 64 to County Road S-5-19, about 2 miles north on the county road, 1,000 feet east of the road; elevation of 155 feet.

- A1—0 to 4 inches; black (N 2/) loam; strong fine crumb structure; friable; many medium and fine roots; strongly acid; clear smooth boundary.
- A2—4 to 12 inches; black (N 2/) loam; strong medium crumb structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.
- Btg1—12 to 38 inches; very dark gray (10YR 3/1) clay; moderate medium subangular blocky structure; firm, slightly sticky and plastic; few faint clay films on faces of peds; common fine roots; common fine prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix; common fine prominent brown (7.5YR 4/4) oxidized rhizospheres; very strongly acid; gradual wavy boundary.
- Btg2—38 to 52 inches; dark gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm, sticky and plastic; few faint clay films on faces of peds; few fine and medium roots; common fine prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix and as oxidized rhizospheres; very strongly acid; gradual wavy boundary.
- Btg/Cg—52 to 80 inches; dark gray (10YR 4/1) clay (Btg part); 15 percent bluish gray (10B 6/) clay (Cg part); weak medium subangular blocky structure (Btg part); massive (Cg part); firm, sticky and plastic; extremely firm in Cg part; very few faint clay films on faces of peds; few fine roots; common fine prominent brown (7.5YR 4/4) oxidized rhizospheres; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron with clear boundaries in the matrix; extremely acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR, value of 2 or 3, and chroma of 1 or neutral in hue and has value of 2 or 3

Texture—loam, sandy loam, fine sandy loam, silt loam, silty clay loam, or clay loam

E horizon:

Color—hue of 10YR, value of 2 or 3, and chroma of 1 or neutral in hue and has value of 2 or 3

Texture—sandy clay loam, clay loam, or silty clay loam

Btg horizon:

Color—hue of 10YR, value of 2 to 7, and chroma of 1 or 2 or neutral in hue and has value of 2 to 7

Texture—clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray

BCg horizon (where present):

Color—hue of 10YR, value of 4 to 6, and chroma of 1 or 2 or neutral in hue and has value of 4 to 6

Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay
 Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray

Cg horizon (where present):

Color—hue of 10YR, value of 4 to 6, and chroma of 1 or 2 or neutral in hue and has value of 4 to 6
 Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay or is stratified with these textures
 Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray

Coxville Series

Landform: Upland drainageways, depressions, and Carolina bays

Parent material: Clayey marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Byars soils, which have a darker-colored surface horizon than the Coxville soils
- Lynchburg soils, which are somewhat poorly drained and have less clay in the subsoil than the Coxville soils
- Rains soils, which have less clay in the subsoil than the Coxville soils

Taxonomic Classification

Fine, kaolinitic, thermic Typic Paleaquults

Typical Pedon

Coxville fine sandy loam, 0 to 2 percent slopes; in a wooded area, about 24 miles southeast of Orangeburg, Orangeburg County, south on U.S. Highway 15 from its junction with U.S. Highway 176, about 0.4 mile west on S.C. Highway 613, about 800 feet north of the highway, 100 feet east of an open field.

A—0 to 5 inches; very dark gray (N 3/) fine sandy loam; moderate medium granular structure; friable; common fine and few medium roots; very strongly acid; clear smooth boundary.

Btg1—5 to 9 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; common medium and few coarse roots; common medium faint yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; clear smooth boundary.

Btg2—9 to 21 inches; gray (10YR 5/1) clay; weak coarse subangular blocky structure; firm; few faint clay films on faces of peds; few fine roots; common medium prominent brownish yellow (10YR 6/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg3—21 to 62 inches; gray (10YR 6/1) clay; weak coarse subangular blocky structure; very firm; few fine pores; fine sand coatings along faces of peds in lower part; very few faint clay films on faces of peds; common medium prominent brownish yellow (10YR 6/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg4—62 to 80 inches; gray (10YR 6/1) and dark gray (N 4/) clay; moderate coarse subangular blocky structure; firm; common fine pockets of white sand; common medium prominent yellow (10YR 7/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR to 5Y, value of 2 to 5, and chroma of 1 or 2 or neutral in hue and has value of 2 to 5

Texture—loam, sandy loam, fine sandy loam, or sandy clay loam

Eg horizon (where present):

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2 or neutral in hue and has value of 5 to 7

Texture—loam, sandy loam, or fine sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—clay loam, sandy clay, or clay; thin subsurface horizons of sandy clay loam in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay or is stratified with these textures

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Echaw Series

Landform: Coastal Plain uplands

Parent material: Sandy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Alaga and Foxworth soils, which do not have a spodic horizon and are better drained than the Echaw soils
- Seagate soils, which have an argillic horizon

Taxonomic Classification

Sandy, siliceous, thermic Oxyaquic Alorthods

Typical Pedon

Echaw fine sand, 0 to 2 percent slopes; 0.8 mile southeast of the intersection of U.S. Highways 301 and 78 in Bamberg to County Road S-5-362, about 9.3 miles south on County Road S-5-362 to County Road S-5-84, about 1.9 miles east on County Road S-5-84 to a logging road, 0.36 mile north on the logging road, 200 feet east of the road; elevation of 138 feet.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; clear wavy boundary.

E1—5 to 12 inches; brown (10YR 4/3) fine sand; single grain; loose; common fine roots; moderately acid; gradual wavy boundary.

- E2—12 to 23 inches; brown (10YR 5/3) fine sand; single grain; loose; few fine roots; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid; clear wavy boundary.
- E3—23 to 33 inches; grayish brown (10YR 5/2) and yellowish brown (10YR 5/4) fine sand; single grain; loose; few fine roots; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid; clear wavy boundary.
- Bh1—33 to 45 inches; dark reddish gray (5YR 4/2) fine sand; weak medium subangular blocky structure; friable, slightly cemented; strongly acid; clear wavy boundary.
- Bh2—45 to 58 inches; dark reddish brown (5YR 3/3) sand; weak medium subangular blocky structure; friable, slightly cemented; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; clear wavy boundary.
- C—58 to 80 inches; yellowish brown (10YR 5/4) sand; single grain; loose; common fine prominent strong brown (7.5YR 5/8) masses of oxidized iron with diffuse boundaries in the matrix; moderately acid.

Range in Characteristics

Thickness of solum: 45 to more than 60 inches

Reaction: Very strongly acid to moderately acid, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 to 3 or neutral in hue and has value of 2 to 5

Texture—loamy sand, loamy fine sand, sand, or fine sand

E horizon (upper):

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 6; lower part of horizon has similar colors or chroma of 1 or 2

Texture—loamy sand, loamy fine sand, sand, or fine sand

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

E horizon (lower):

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 6

Texture—loamy sand, loamy fine sand, sand, or fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Bh horizon:

Color—hue of 5YR to 10YR, value of 2 to 5, and chroma of 1 to 4 or neutral in hue and has value of 2 to 5

Texture—loamy sand, loamy fine sand, sand, or fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

C horizon:

Color—grayish or brownish

Texture—loamy sand, loamy fine sand, sand, or fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Elloree Series

Landform: Upland drainageways

Parent material: Loamy and sandy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Goldsboro soils, which are moderately well drained and have sandy surface layers less than 20 inches thick
- Lynchburg soils, which are somewhat poorly drained and have sandy surface layers less than 20 inches thick
- Ocilla soils, which are somewhat poorly drained

Taxonomic Classification

Loamy, siliceous, thermic Arenic Endoaqualfs

Typical Pedon

Elloree loamy sand, 0 to 2 percent slopes, frequently flooded; in Orangeburg County, about 7.5 miles north of Holly Hill, 1.4 miles northeast on S.C. Secondary Highway 202 from its junction with U.S. Highway 15, about 0.3 mile south on a county road, 350 feet west of a road ditch, 50 feet north of the ditch.

A—0 to 6 inches; black (10YR 2/1) loamy sand; moderate medium granular structure; friable; many fine, medium, and coarse roots; moderately acid; abrupt smooth boundary.

E—6 to 23 inches; light brownish gray (10YR 6/2) sand; common coarse uncoated sand grains and few strong brown coarse sand grains; single grain; very friable; few fine and medium roots; neutral; clear smooth boundary.

Btg1—23 to 27 inches; grayish brown (10YR 5/2) sandy loam; moderate medium subangular blocky structure; friable; common fine roots along faces of peds; very few faint clay films on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions; neutral; clear wavy boundary.

Btg2—27 to 42 inches; gray (10YR 5/1) sandy loam; moderate medium subangular blocky structure; friable; many fine roots along faces of peds; few coarse strong brown (7.5YR 5/6) masses of oxidized iron; neutral; gradual wavy boundary.

BCg1—42 to 53 inches; gray (10YR 6/1) loamy sand; many coarse distinct light brownish gray (2.5Y 6/2) pockets of sand; weak medium subangular blocky structure; very friable; few fine roots; neutral; clear wavy boundary.

BCg2—53 to 69 inches; light gray (2.5Y 7/2) sandy loam; weak coarse subangular blocky structure; very friable; common fine distinct olive yellow (2.5Y 6/6) masses of oxidized iron; neutral; gradual smooth boundary.

Cg—69 to 80 inches; light gray (2.5Y 7/2) sandy loam; massive; firm; few fine distinct olive yellow (2.5Y 6/6) masses of oxidized iron; neutral.

Range in Characteristics

Thickness of solum: More than 40 inches

Reaction: Strongly acid to neutral in the A and E horizons; neutral to moderately alkaline throughout the rest of the profile

A horizon:

Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 to 3 or neutral in hue and has value of 2 or 3

Texture—loamy fine sand or loamy sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—loamy sand, loamy fine sand, sand, or fine sand

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—dominantly sandy loam but ranging to sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of brown and gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—loamy sand, sandy clay, fine sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of brown and gray

Cg horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2

Texture—sand, loamy sand, sandy loam, sandy clay loam, or clay

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of brown and gray

Eunola Series

Landform: Low stream or marine terraces and Carolina bays of the Coastal Plain

Parent material: Fluvial and marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Goldsboro soils, which have a solum thickness greater than 60 inches
- Johns soils, which have a thinner solum than the Eunola soils and have contrasting textures between the Bt and C horizons at a depth of less than 40 inches

Taxonomic Classification

Fine-loamy, siliceous, thermic Aquic Hapludults

Typical Pedon

Eunola fine sandy loam, 0 to 2 percent slopes; from Bamberg, 0.4 mile east on U.S. Highway 78 from its intersection with U.S. Highway 301, about 2.6 miles north on County Road S-5-20 to a field road, 0.2 mile north on the field road, 100 feet east of the road, 50 feet north of the edge of the field; elevation of 135 feet.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium subangular blocky structure; friable; few medium and common fine roots; very strongly acid; abrupt smooth boundary.

Bt1—9 to 22 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds and along root channels; few fine roots; common medium prominent gray (10YR 6/1) irregularly shaped iron depletions with clear boundaries in the matrix; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; few flakes of mica; very strongly acid; gradual wavy boundary.

Bt2—22 to 36 inches; brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky structure; friable; few faint clay films lining root channels; few fine roots; common flakes of mica; many coarse prominent light gray (10YR 7/1) irregularly shaped iron depletions with clear boundaries in the matrix; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

BC—36 to 55 inches; gray (10YR 6/1) and brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky structure; very friable; few fine flakes of

mica; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.
 C—55 to 80 inches; brownish yellow (10YR 6/6) and light gray (10YR 7/1) coarse sand; single grain; very friable; few fine flakes of mica; very strongly acid.

Range in Characteristics

Thickness of solum: 40 to more than 60 inches

Reaction: Very strongly acid or strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 4

Texture—loam, loamy sand, loamy fine sand, fine sand, fine sandy loam, or sandy loam

E horizon (where present):

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 or 4

Texture—loamy sand, loamy fine sand, fine sand, fine sandy loam, or sandy loam

Bt horizon (upper part):

Color—hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—fine sandy loam, sandy loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Bt horizon (lower part, where present):

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8

Texture—sandy clay loam, sandy clay, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

BC horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8

Texture—sandy loam, fine sandy loam, sandy clay loam, or coarse sandy loam; horizon is stratified with these textures and sand or loamy sand in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

C horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8

Texture—sand, coarse sand, fine sand, loamy sand, sandy loam, or fine sandy loam or is stratified with these textures and sandy clay loam

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Foxworth Series

Landform: Coastal Plain uplands

Parent material: Sandy marine sediments

Slope range: 0 to 6 percent

Associated Soils

- Alaga soils, which have more than 10 percent silt plus clay in the 10- to 40-inch control section
- Blanton and Troup soils, which have sandy surface and subsurface horizons 40 to 80 inches thick

Taxonomic Classification

Thermic, coated Typic Quartzipsamments

Typical Pedon

Foxworth sand, 0 to 6 percent slopes; 10.6 miles southwest of the intersection of U.S. Highways 301 and 78 in Bamberg to County Road S-5-58, about 1.1 miles east on County Road S-5-58 to a field road, south on the field road, 1,800 feet south-southeast of the county road; elevation of 173 feet.

A—0 to 6 inches; yellowish brown (10YR 5/4) sand; single grain; loose; common fine and very fine and few medium roots; very strongly acid; clear wavy boundary.

C1—6 to 11 inches; very pale brown (10YR 7/4) sand; single grain; loose; common fine and few medium roots; very strongly acid; gradual wavy boundary.

C2—11 to 42 inches; brownish yellow (10YR 6/8) sand; single grain; loose; very strongly acid; gradual wavy boundary.

Cg1—42 to 65 inches; light gray (10YR 7/2) sand; single grain; loose; common coarse prominent brownish yellow (10YR 6/6) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid; gradual wavy boundary.

Cg2—65 to 80 inches; light gray (10YR 7/2) sand; single grain; loose; strongly acid.

Range in Characteristics

Thickness of sands: More than 80 inches

Reaction: Very strongly acid to slightly acid, except where lime has been applied

A or Ap horizon:

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 4

Texture—sand or fine sand

C horizon (upper part):

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8; uncoated sand grains have chroma of 1 or 2

Texture—sand or fine sand

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of yellow and gray

C horizon (lower part):

Color—hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 3 to 6

Texture—sand or fine sand

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of yellow and gray

Cg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 or 2

Texture—coarse sand, sand, or fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of yellow and gray

Goldsboro Series

Landform: Broad flats and low stream terraces of the Coastal Plain

Parent material: Fluvial and marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Lynchburg soils, which are somewhat poorly drained
- Norfolk soils, which are well drained and are in the slightly higher positions

- Rains soils, which are poorly drained

Taxonomic Classification

Fine-loamy, siliceous, thermic Aquic Paleudults

Typical Pedon

Goldsboro loamy sand, 0 to 2 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 9.9 miles east on U.S. Highway 78 to S.C. Highway 61, about 1.8 miles east on S.C. Highway 61 to County Road 84, right on County Road 84 for 1.3 miles, left onto County Road 18, about 0.8 mile on County Road 18, left onto a field road at block house, 0.5 mile east of County Road 18 and 150 feet northeast of the field road; elevation of 145 feet.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; abrupt smooth boundary.

Bt1—5 to 13 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; few fine roots; common medium prominent strong brown (7.5YR 5/8) and common fine distinct pale brown (10YR 6/3) masses of oxidized iron; slightly acid; clear wavy boundary.

Bt2—13 to 30 inches; yellowish brown (10YR 5/6) and gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; very few faint clay films on faces of peds and lining root channels; few fine roots; common medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bt3—30 to 57 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds and lining root channels; few fine roots; common medium prominent gray (10YR 6/1) iron depletions and distinct strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bt4—57 to 68 inches; yellowish brown (10YR 5/6) sandy clay; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds and lining root channels; few fine roots; many coarse prominent gray (10YR 6/1) iron depletions and common medium prominent yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bt5—68 to 80 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; many medium prominent gray (10YR 6/1) iron depletions and light yellowish brown (10YR 6/4) and common medium prominent red (2.5YR 4/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 6, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, fine sandy loam, or sandy loam

E horizon (where present):

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 6

Texture—loamy sand, loamy fine sand, fine sandy loam, or sandy loam

Bt horizon (upper part):

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray; iron depletions are within 30 inches of the soil surface

Bt horizon (lower part):

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray; iron depletions within 30 inches of the soil surface

Btg horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—sandy clay loam, sandy loam, clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

BC horizon (where present):

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8

Texture—sandy loam, sandy clay loam, clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Grifton Series

Landform: Drainageways, flood plains, and creek channels

Parent material: Loamy and sandy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Lumbee soils, which are more acid throughout than the Grifton soils and have less than 35 percent base saturation
- Lynchburg soils, which are somewhat poorly drained, are more acid throughout than the Grifton soils, and have less than 35 percent base saturation
- Meggett soils, which have more clay in the subsoil than the Grifton soils

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Endoaqualfs

Typical Pedon

Grifton loam in an area of Grifton-Osier complex, 0 to 2 percent slopes, frequently flooded; from the intersection of U.S. Highways 301 and 78 in Bamberg, 0.8 mile east on U.S. Highway 78 to County Road S-5-362, about 13.5 miles southeast on County Road S-5-362 to County Road S-5-21, about 0.7 mile west on County Road S-5-21, about 120 feet south of the road; elevation of 78 feet.

A—0 to 7 inches; very dark gray (10YR 3/1) loam; moderate medium crumb structure; friable; many fine and medium roots; neutral; clear wavy boundary.

Btg1—7 to 35 inches; gray (10YR 6/1) sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; common medium prominent brownish yellow (10YR 6/6) masses of oxidized iron with clear boundaries in the matrix; neutral; gradual wavy boundary.

Btg2—35 to 56 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; few fine roots; neutral; gradual wavy boundary.

2Cg—56 to 80 inches; gray (10YR 6/1) sand; single grain; loose; neutral.

Range in Characteristics

Thickness of solum: 40 to 70 inches

Reaction: Very strongly acid to neutral in the A and E horizons and the upper part of the B horizon; moderately acid to moderately alkaline throughout the rest of the profile

A horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2 or neutral in hue and has value of 2 to 5

Texture—sandy loam, fine sandy loam, loamy fine sand, or loamy sand

Eg horizon (where present):

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

Redoximorphic features—masses of oxidized iron in shades of yellow and brown

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sandy loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow, brown, and red

2Cg horizon:

Color—hue of 10YR to 5GY, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—sand, loamy sand, sandy loam, sandy clay loam, or clay

Redoximorphic features (where present)—masses of oxidized iron in shades of yellow, brown, and red; iron depletions in shades of gray

Hobonny Series

Landform: Drainageways and areas adjacent to large streams

Parent material: Decomposed organic material overlying sandy and loamy marine sediments

Slope range: 0 to 1 percent

Associated Soils

- Johnston soils, which do not have thick, organic surface material

Taxonomic Classification

Euic, thermic Typic Medisaprists

Typical Pedon

Hobonny muck, 0 to 1 percent slopes, occasionally flooded; 16 miles southwest from Bamberg on U.S. Highway 301 to County Road S-5-31, about 3.5 miles southeast on County Road S-5-31, about 2 miles north on County Road S-5-19, about 1,000 feet east of County Road S-5-19; elevation of 155 feet.

Oa1—0 to 22 inches; black (N 2/) sapric material; less than 15 percent fibers after rubbing; moderate medium crumb structure; friable; many medium and fine roots; slightly acid; clear wavy boundary.

Oa2—22 to 58 inches; black (N 2/) sapric material; less than 5 percent fibers after rubbing; pasty and greasy feeling; few medium and fine roots; neutral; clear smooth boundary.

Oe—58 to 65 inches; dark reddish brown (5YR 3/3) hemic material; 40 percent fibers after rubbing; common fine pieces of cypress and gum roots and stems; neutral; clear smooth boundary.

2Cg—65 to 80 inches; light gray (10YR 7/1) sand; single grain; massive; slightly alkaline.

Range in Characteristics

Thickness of organic material: More than 51 inches; material may have thin mineral lenses of sandy or loamy material

Reaction: Very strongly acid to neutral in the organic material; very strongly acid to slightly alkaline in the mineral material

Surface tier:

Color—hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2 or neutral in hue and has value of 2 or 3

Texture—muck or peaty muck

Subsurface tier:

Color—hue of 2.5YR to 5Y, value of 2 or 3, and chroma of 1 to 4 or neutral in hue and has value of 2 or 3

Texture—muck; greasy and pasty feeling

2Cg horizon:

Color—hue of 7.5YR to 5Y, value of 3 to 7, and chroma of 1 or 2

Texture—sand or loamy sand; may also be sandy clay loam, sandy clay, or clay or be stratified with these textures

Johns Series

Landform: Low stream or marine terraces and Carolina bays of the Coastal Plain

Parent material: Fluvial and marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Eunola soils, which have thicker sola than the Johns soils and have no contrasting textures within 40 inches
- Lumbee soils, which are poorly drained
- Norfolk soils, which are well drained, have thicker sola than the Johns soils, and have no contrasting textures within 40 inches

Taxonomic Classification

Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Aquic Hapludults

Typical Pedon

Johns fine sandy loam, 0 to 2 percent slopes; from Bamberg, 0.4 mile east on U.S. Highway 78 from its intersection with U.S. Highway 301, about 4.1 miles north on County Road S-5-20, about 380 feet north of the county road, 5 feet south of a field road; elevation of 130 feet.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate medium granular structure; friable; common fine and medium roots; very strongly acid; clear smooth boundary.

E—5 to 9 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; common medium organic stains; very strongly acid; clear smooth boundary.

- Bt1—9 to 18 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds and along root channels; few medium and common fine roots; few fine prominent light brownish gray (10YR 6/2) irregularly shaped iron depletions with clear boundaries in the matrix; common medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; few flakes of mica; very strongly acid; gradual wavy boundary.
- Bt2—18 to 27 inches; brownish yellow (10YR 6/6) coarse sandy loam; weak medium subangular blocky structure; friable; few faint clay films lining root channels; few fine and medium roots; few fine flakes of mica; few fine prominent gray (10YR 6/1) irregularly shaped iron depletions with clear boundaries in the matrix; many medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix and common medium distinct light yellowish brown (10YR 6/4) masses of oxidized iron with diffuse boundaries in the matrix; very strongly acid; clear wavy boundary.
- 2C—27 to 41 inches; strong brown (7.5YR 5/8) and very light yellowish brown (10YR 6/4) coarse sand; single grain; loose; few fine roots; few fine flakes of mica; common medium prominent yellowish red (5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.
- 2Cg1—41 to 62 inches; light gray (10YR 7/2) coarse sand; single grain; loose; few fine flakes of mica; common medium distinct brownish yellow (10YR 6/6) masses of oxidized iron with diffuse boundaries in the matrix; very strongly acid; gradual wavy boundary.
- 2Cg2—62 to 80 inches; light brownish gray (10YR 6/2) coarse sand; single grain; loose; few fine flakes of mica; strongly acid.

Range in Characteristics

Thickness of solum: 15 to 40 inches

Reaction: Very strongly acid or strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3 or neutral in hue and has value of 3 to 5

Texture—loamy sand, loamy fine sand, fine sandy loam, or sandy loam

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 or 4

Texture—loamy sand, loamy fine sand, fine sandy loam, or sandy loam

Bt horizon:

Color—hue of 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—fine sandy loam, sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Btg horizon (where present):

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture—sandy clay loam or sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

2C horizon:

Color—hue of 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—coarse sand, sand, loamy sand, sandy loam, or loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

2Cg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture—coarse sand, sand, loamy sand, sandy loam, or loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Johnston Series

Landform: Flood plains, drainageways, and depressions

Parent material: Sandy marine and fluvial sediments

Slope range: 0 to 2 percent

Associated Soils

- Hobonny soils, which have thick, organic surface layers

Taxonomic Classification

Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts

Typical Pedon

Johnston sandy loam, 0 to 2 percent slopes, frequently flooded; in Orangeburg County; about 15.0 miles southeast of Orangeburg and 4.0 miles west of Bowman, 2.6 miles southwest on S.C. Highway 210 from its junction with U.S. Highway 178, about 1.0 mile north on a county road, 250 feet west of the road.

Oi—3 inches to 0; very dark brown (10YR 2/2) undecomposed fibric material consisting of leaves, twigs, and stems; 80 percent fiber content after rubbing; extremely acid; abrupt smooth boundary.

A1—0 to 12 inches; black (N 2/) sandy loam; massive; very friable; many fine, medium, and coarse roots; very strongly acid; abrupt smooth boundary.

A2—12 to 26 inches; black (10YR 2/1) sandy loam; massive; very friable; many fine, medium, and coarse roots; very strongly acid; clear smooth boundary.

Cg1—26 to 36 inches; dark gray (10YR 4/1) sandy loam; massive; friable; common fine and medium roots; common coarse distinct black (N 2/0) and common medium faint dark grayish brown (10YR 4/2) coatings of organic matter; very strongly acid; clear smooth boundary.

Cg2—36 to 44 inches; light brownish gray (10YR 6/2) sandy loam; common coarse faint dark gray (10YR 4/1) lenses of loamy fine sand; massive; very friable; common fine roots; very strongly acid; gradual smooth boundary.

Cg3—44 to 64 inches; brown (7.5YR 5/2) loamy sand; massive; very friable; common medium distinct dark gray (10YR 4/1) coatings; very strongly acid; gradual smooth boundary.

Cg4—64 to 72 inches; grayish brown (10YR 5/2) sandy loam; massive; friable; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Very strongly acid or strongly acid

A or Ap horizon:

Color—hue of 10YR to 5Y, value of 2 or 3, and chroma of 1 or 2 or neutral in hue and has value of 2 or 3

Texture—mucky loam, loam, fine sandy loam, sandy loam, or coarse sandy loam

Cg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—loam, fine sandy loam, sandy loam, coarse sandy loam, loamy sand, sand, or loamy fine sand

Note: The Johnston soils in Bamberg County have a hue that ranges to 7.5YR, which is outside the Range in Characteristics for the series. This difference, however, does not significantly affect classification or the use and management of the soils.

Lucy Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine and fluvial sediments

Slope range: 0 to 6 percent

Associated Soils

- Autryville soils, which are bisectual
- Bonneau soils, which have iron depletions within 60 inches of the surface and have a dominant hue of 7.5YR or yellower in the Bt horizon
- Troup soils, which have a sandy epipedon thicker than 40 inches

Taxonomic Classification

Loamy, siliceous, thermic Arenic Kandiodults

Typical Pedon

Lucy sand, 0 to 6 percent slopes; from Denmark, 3.75 miles northeast on S.C. Highway 70 to its intersection with S.C. Highway 49, about 1,200 feet southeast on S.C. Highway 49, northeast on a farm road, 1.0 mile north from the intersection of S.C. Highway 49 and the farm road, 300 feet northeast of a power line, 30 feet west in direction of an irrigation pumping station; elevation of 190 feet.

Ap—0 to 6 inches; brown (10YR 4/3) sand; single grain; loose; common fine roots; moderately acid; clear smooth boundary.

E1—6 to 22 inches; light yellowish brown (10YR 6/4) coarse sand; single grain; loose; common fine roots; common medium distinct reddish yellow (7.5YR 6/6) masses of oxidized iron; slightly acid; clear wavy boundary.

E2—22 to 28 inches; reddish yellow (7.5YR 6/6) coarse sand; single grain; loose; few fine roots; moderately acid; clear wavy boundary.

Bt1—28 to 35 inches; red (2.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt2—35 to 52 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; extremely acid; gradual wavy boundary.

Bt3—52 to 64 inches; red (2.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; extremely acid; gradual wavy boundary.

Bt4—64 to 72 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few medium prominent reddish yellow (7.5YR 6/8) masses of oxidized iron; extremely acid.

Range in Characteristics

Thickness of solum: 60 inches or more

Reaction: Moderately acid to very strongly acid in the A and E horizons, except where lime has been applied; extremely acid to strongly acid in the Bt horizon

A or Ap horizon:

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 4

Texture—sand, fine sand, loamy sand, or loamy fine sand

E horizon:

Color—hue of 5YR to 10YR, value of 4 to 8, and chroma of 3 to 8

Texture—coarse sand, sand, fine sand, loamy sand, or loamy fine sand

Bt horizon (upper part):

Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 or 8

Texture—sandy loam, fine sandy loam, or sandy clay loam

Bt horizon (lower part):

Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 or 8

Texture—sandy clay loam or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Lumbee Series

Landform: Upland drainageways

Parent material: Loamy and sandy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Johns soils, which are somewhat poorly drained or moderately well drained
- Orangeburg soils, which are well drained and have thicker sola than the Lumbee soils
- Rembert soils, which have more clay in the subsoil than the Lumbee soils

Taxonomic Classification

Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Typic Endoaquults

Typical Pedon

Lumbee loam, 0 to 2 percent slopes, frequently flooded; from the intersection of U.S. Highways 301 and 78 in Bamberg, 6.7 miles south on U.S. Highway 301 to County Road S-5-12, about 1.2 miles on the county road to a logging road, 1,500 feet east on the logging road, 160 feet south of the road; elevation of 155 feet.

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) loam; moderate medium crumb structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

Eg—4 to 12 inches; gray (10YR 5/1) loamy sand; weak fine granular structure; very friable; few fine and medium roots; strongly acid; clear wavy boundary.

Btg1—12 to 25 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Btg2—25 to 38 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; clear wavy boundary.

2Cg1—38 to 54 inches; gray (10YR 5/1) and dark gray (10YR 4/1) fine sand that has thin strata of sandy clay; massive and single grain; loose, densely packed; strongly acid; gradual wavy boundary.

2Cg2—54 to 80 inches; light gray (10YR 7/1) fine sand; single grain; loose; strongly acid.

Range in Characteristics

Thickness of solum: 20 to 40 inches

Reaction: Very strongly acid or strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 to 3 or neutral in hue and has value of 2 to 5

Texture—loam, sandy loam, fine sandy loam, or loamy sand

Eg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture—loam, sandy loam, fine sandy loam, or loamy sand

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Btg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture—loam, sandy clay loam, clay loam, or sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

2Cg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2

Texture—sand, fine sand, coarse sand, loamy coarse sand, or loamy sand; thin lenses of finer textures occur in some pedons

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Lynchburg Series

Landform: Shallow depressions and broad interstream divides

Parent material: Loamy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Goldsboro soils, which are moderately well drained
- Johns soils, which have contrasting textures within a depth of 40 inches
- Rains soils, which are poorly drained

Taxonomic Classification

Fine-loamy, siliceous, thermic Aeric Paleaquults

Typical Pedon

Lynchburg fine sandy loam, 0 to 2 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 8.5 miles east to County Road 450, about 1.2 miles southwest on the county road, 650 feet southeast of a telephone pole on the north side of the road, 100 feet south of a ditch; elevation of 140 feet.

- Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; common fine roots; extremely acid; abrupt smooth boundary.
- Bt—7 to 13 inches; light olive brown (2.5Y 5/4) and grayish brown (10YR 5/2) sandy clay loam; moderate medium subangular blocky structure; friable; few medium and common fine roots; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; extremely acid; clear wavy boundary.
- Btg1—13 to 28 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; very few fine clay films along root channels; few fine roots; common coarse distinct yellowish brown (10YR 5/4) and common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.
- Btg2—28 to 44 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; very few fine clay films along root channels; few fine roots; common medium distinct brown (10YR 5/3) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix and few coarse prominent red (2.5YR 4/6) masses of oxidized iron with diffuse boundaries in the matrix; extremely acid; gradual wavy boundary.
- Btg3—44 to 62 inches; gray (10YR 6/1) and grayish brown (10YR 5/2) sandy clay loam; weak medium subangular blocky structure; friable; many coarse prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; few fine faint light gray (10YR 7/1) irregularly shaped iron depletions with diffuse boundaries in the matrix; extremely acid; gradual wavy boundary.
- BCg—62 to 80 inches; light gray (2.5Y 7/2), gray (10YR 6/1), red (2.5YR 4/6), and brownish yellow (10YR 6/6) sandy clay loam that has pockets of sandy loam; massive; firm; common fine flakes of mica; extremely acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2 or neutral in hue and has value of 2 to 4

Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

E horizon (where present):

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Bt horizon:

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8

Texture—sandy clay loam, loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sandy loam, fine sandy loam, sandy clay loam, loam, or clay loam; sandy clay or clay below a depth of 40 inches

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, sandy clay loam, loam, or clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

McColl Series

Landform: Upland drainageways, depressions, and Carolina bays

Parent material: Fluvial and marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Coxville and Rains soils, which do not have a 20 percent clay decrease within 60 inches of the surface and do not have fragic horizons
- Rembert soils, which are well drained

Taxonomic Classification

Fine, kaolinitic, thermic Typic Epiaquults

Typical Pedon

McColl loam, 0 to 2 percent slopes; in Sumter County; about 2 miles west on County Road 33 from its intersection with South Carolina Highway 120, about 700 feet northwest of the county road (50 feet north of a fence), 50 feet southwest of a drainage ditch.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loam; weak fine granular structure; very friable; many fine roots; medium acid; abrupt wavy boundary.

Btg1—6 to 9 inches; dark grayish brown (10YR 4/2) sandy clay loam; weak fine subangular blocky structure; friable; common fine roots; strong brown stains along old root channels; few fine pores; strongly acid; clear smooth boundary.

Btg2—9 to 13 inches; light brownish gray (2.5Y 6/2) clay; weak fine subangular blocky structure; firm; sticky; common fine roots; strong brown stains along old root channels; common fine pores; few distinct clay films; very strongly acid; clear irregular boundary.

Btg/Bx—13 to 23 inches; (Btg part) light brownish gray (2.5Y 6/2) clay; weak medium subangular blocky structure; firm, sticky; common fine roots; common fine pores; few distinct clay films; few medium prominent red (2.5YR 4/8) masses of oxidized iron; (Bx part—about 40 percent) strong brown (7.5YR 5/6) sandy clay loam; strong coarse prismatic structure which is about 1 inch in diameter at top and 3 inches at bottom; prisms part horizontally to coarse platy structure; 40 percent of the strong brown part is brittle; common fine and medium pores, the larger pores are coated or filled with gray clay; boundary between clay and sandy clay loam is sharp; strongly acid; clear irregular boundary.

Btx—23 to 42 inches; strong brown (7.5YR 5/6) sandy clay loam; about 20 percent of horizon is vertical streaks of light gray (10YR 7/1) clay; moderate coarse prismatic structure parting to strong coarse platy; brittle; many fine and medium pores, some are coated or filled with gray clay; streaks have weak medium subangular blocky structure; firm, sticky in streaks; common fine roots in upper part of horizon and few fine roots in lower part; common medium prominent red (2.5YR 4/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

- BC1—42 to 63 inches; strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, firm in place; sticky; common medium prominent pale brown (10YR 6/3) iron depletions and red (2.5YR 4/6) masses of oxidized iron; many medium and coarse prominent light gray (10YR 7/1) iron depletions that are massive clay; strongly acid; gradual wavy boundary.
- BC2—63 to 75 inches; strong brown (7.5YR 5/6) sandy loam; massive; friable; common medium prominent pale brown (10YR 6/3) iron depletions and red (2.5YR 4/6) masses of oxidized iron; many medium and coarse prominent light gray (10YR 7/1) iron depletions that are sandy clay loam; strongly acid; gradual wavy boundary.
- Cg—75 to 80 inches; light gray (10YR 7/1) sandy loam; massive; very friable; many coarse prominent yellow (10YR 7/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of solum: 40 to more than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR, value of 2 to 4, and chroma of 1 or 2

Texture—loam, sandy loam, fine sandy loam, sandy clay loam, or clay loam

E horizon:

Color—hue of 10YR, value of 6 or 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, or loam

Btg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sandy clay loam in the upper part or is clay loam, sandy clay, or clay; lower boundary is clear irregular or abrupt irregular in most pedons and has tongues of Bt horizon material that taper as depth increases and extend into the Btx horizon

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown and gray

Btx horizon:

Color—hue of 7.5YR or 10YR, value of 5, and chroma of 4 to 8

Texture—sandy clay loam, clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown and gray

BC horizon:

Color—hue of 7.5YR or 10YR, value of 5, and chroma of 4 to 8

Texture—sandy clay loam or sandy loam; pockets of coarser or finer textures occur in most pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown and gray

BCg horizon (where present):

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sandy clay loam or sandy loam; pockets of coarser or finer textures occur in most pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown and gray

Cg horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—sandy loam, sandy clay loam, or sandy clay; pockets of coarser or finer textures occur in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown and gray

Meggett Series

Landform: Broad, nearly level flood plains and low terraces

Parent material: Clayey marine and alluvial sediments

Slope range: 0 to 2 percent

Associated Soils

- Johns soils, which have less clay in the subsoil than the Meggett soils and are moderately well drained or somewhat poorly drained
- Ogeechee soils, which have less clay in the subsoil than the Meggett soils and lack an abrupt texture change
- Rains soils, which have less clay in the subsoil than the Meggett soils and have lower base saturation

Taxonomic Classification

Fine, mixed, active, thermic Typic Albaqualfs

Typical Pedon

Meggett fine sandy loam, 0 to 2 percent slopes, frequently flooded; 8.75 miles east of Bamberg on U.S. Highway 78, about 3,300 feet north of the highway, on the flood plain of the Edisto River.

A—0 to 4 inches; very dark gray (10YR 3/1) fine sandy loam; moderate medium granular structure; friable; common fine and medium roots; slightly acid; clear wavy boundary.

BA—4 to 9 inches; dark gray (10YR 4/1) fine sandy loam; weak medium subangular blocky structure; friable; many fine roots; common fine prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix; moderately acid; clear wavy boundary.

Btg1—9 to 28 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; very few faint clay films on faces of peds; common fine and medium roots; common medium prominent brown (7.5YR 4/4) and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron with clear boundaries in the matrix; moderately acid; gradual wavy boundary.

Btg2—28 to 48 inches; gray (2.5Y 5/1) clay; weak medium subangular blocky structure; firm; slightly plastic, sticky; very few faint clay films on faces of peds; common fine roots; few medium distinct bluish gray (5B 5/1) and common medium distinct light brownish gray (10YR 6/2) iron depletions along root channels; slightly acid; clear wavy boundary.

BCg—48 to 58 inches; gray (10YR 5/1) sandy clay loam; weak coarse subangular blocky structure; friable; many fine and very fine roots; slightly acid; clear wavy boundary.

Cg—58 to 80 inches; light gray (10YR 7/1) loamy coarse sand; single grain; loose; very friable; common fine flakes of mica; slightly acid.

Range in Characteristics

Thickness of solum: 40 to more than 80 inches

Reaction: Strongly acid to slightly acid in the A, E, and BA horizons; strongly acid to moderately alkaline in the upper part of the Btg horizon; slightly acid to moderately alkaline in the lower part of the Btg horizon and in the BCg and Cg horizons

A horizon:

Color—hue of 10YR, value of 2 to 5, and chroma of 1 to 3

Texture—clay loam, loam, fine sandy loam, sandy loam, loamy sand, loamy fine sand, fine sand, or sand

E horizon (where present):

Color—hue of 10YR, value of 4 to 6, and chroma of 1 or 2

Texture—loam, fine sandy loam, sandy loam, loamy sand, loamy fine sand, fine sand, or sand

BA horizon:

Color—hue of 10YR to 5Y, value of 2 to 6, and chroma of 1 to 3

Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and olive; iron depletions in shades of olive and gray

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2

Texture—clay, clay loam, sandy clay, or sandy clay loam; sandy clay loam occurs only in the upper part of horizon

Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and olive; iron depletions in shades of olive and gray

BCg horizon:

Color—hue of 10YR to 5Y, 5GY, 5G, or 5BG, value of 4 to 7, and chroma of 1 or 2

Texture—clay, sandy clay, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and olive; iron depletions in shades of olive and gray

Cg horizon:

Color—hue of 10YR to 5Y, 5GY, 5G, or 5BG, value of 4 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; some pedons have thin strata of sandy or clayey material

Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and olive; iron depletions in shades of olive and gray

Nankin Series

Landform: Coastal Plain uplands

Parent material: Clayey marine sediments

Slope range: 2 to 10 percent

Associated Soils

- Ailey soils, which have sandy surface and subsurface layers more than 20 inches thick
- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick
- Neeses soils, which have a dense, compact substratum between depths of 20 and 40 inches

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Nankin loamy sand, 2 to 6 percent slopes; from the intersection of U.S. Highways 78 and 321 in Denmark, 5.5 miles south on U.S. Highway 321, about 1.7 miles west on County Road 232, about 0.6 mile northwest on County Road 27 to a field road, 1,400 feet northeast of County Road 27; elevation of 210 feet.

Ap—0 to 4 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; common fine roots; few ironstone concretions; very strongly acid; clear smooth boundary.

Bt1—4 to 16 inches; yellowish red (5YR 5/8) sandy clay; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt2—16 to 26 inches; red (2.5YR 5/8) sandy clay; strong medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; common medium distinct red (2.5YR 4/6) and brownish yellow (10YR 6/8) masses of oxidized iron; moderately acid; gradual wavy boundary.

Bt3—26 to 38 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; common medium distinct red (2.5YR 4/6) masses of oxidized iron; few small ironstone concretions and quartz pebbles; strongly acid; gradual wavy boundary.

BC1—38 to 52 inches; red (2.5YR 4/8) and reddish yellow (7.5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable, firm in place; light gray (10YR 7/1) pockets of kaolin; strongly acid; gradual wavy boundary.

BC2—52 to 80 inches; red (2.5YR 4/8) sandy loam; weak coarse subangular blocky structure; friable, firm in place; few fine flakes of mica; few medium prominent brownish yellow (10YR 6/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of solum: 40 inches or more

Reaction: Very strongly acid or strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 1 to 5

Texture—loamy sand or sandy loam

Bt horizon (upper part):

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 or 8

Texture—sandy clay or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Bt horizon (lower part):

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 or 8

Texture—yellow parts are sandy clay or clay; red parts are sandy clay loam or sandy clay that is dense and slightly cemented

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray below 40 inches

BC horizon:

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 or 8

Texture—sandy loam or sandy clay loam; strata of coarser textured materials occur in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Neeses Series

Landform: Coastal Plain uplands

Parent material: Fluvial and marine sediments

Slope range: 2 to 10 percent

Associated Soils

- Ailey soils, which have a sandy epipedon 20 to 40 inches thick
- Nankin soils, which do not have a dense and compact lower subsoil
- Orangeburg soils, which have less clay in the subsoil than the Neeses soils

Taxonomic Classification

Fine, kaolinitic, thermic Typic Hapludults

Typical Pedon

Neeses loamy sand, 2 to 6 percent slopes; in Orangeburg County; 3.0 miles northwest of the town of North, 2.0 miles west of the junction of U.S. Highways 321 and 178, about 1.3 miles north on Secondary Road 1504, about 20 feet west of the road.

A—0 to 5 inches; yellowish brown (10YR 5/4) loamy sand; moderate fine granular structure; very friable; many fine and medium roots; very strongly acid; clear wavy boundary.

E—5 to 8 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; many fine and common medium and coarse roots; very strongly acid; clear wavy boundary.

Bt1—8 to 14 inches; strong brown (7.5YR 5/6) sandy clay; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; common fine and few medium roots; few small pebbles of quartz; strongly acid; clear wavy boundary.

Bt2—14 to 28 inches; strong brown (7.5YR 5/8) sandy clay; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine and medium roots; few nodules of ironstone; common medium distinct red (2.5YR 4/8) masses of oxidized iron; strongly acid; gradually wavy boundary.

Bt3—28 to 37 inches; red (2.5YR 4/8) sandy clay loam and yellowish brown (10YR 5/6) and pale brown (10YR 6/3) sandy clay; red part is massive, dense, and slightly cemented in about 50 percent of the mass and firm in the remainder; yellowish brown and pale brown part has moderate fine subangular blocky structure and is friable; few faint clay films on faces of peds; few fine roots; thin (2 millimeters thick) discontinuous horizontal sheets of ironstone; common nodules of ironstone; very strongly acid; gradual wavy boundary.

BC—37 to 54 inches; red (2.5YR 5/6) and reddish yellow (7.5YR 6/8) sandy clay loam; weak coarse subangular blocky structure; firm; common fine uncoated sand grains; very strongly acid; diffuse wavy boundary.

2C—54 to 85 inches; red (2.5YR 5/8) sandy clay loam; few medium pockets of brownish yellow (10YR 6/8) sandy clay; massive; friable; very strongly acid.

Range in Characteristics

Thickness of solum: More than 40 inches

Depth to dense, compact, slightly cemented horizon: 20 to 35 inches

Reaction: Extremely acid or very strongly acid

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 2 to 4
 Texture—loamy sand or sandy loam

E horizon:

Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
 Texture—loamy sand

Bt horizon (upper part):

Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8; hue may range to 2.5YR in some pedons
 Texture—sandy clay or clay; thin transitional horizons of sandy loam occur in some pedons
 Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray at a depth of 30 to 40 inches

Bt horizon (lower part):

Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 or 8
 Texture—yellow parts are sandy clay or clay that is firm or friable; red parts are sandy clay loam or sandy clay that is dense and slightly cemented
 Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

BC horizon:

Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 or 8
 Texture—sandy loam or sandy clay loam that is friable or firm
 Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

C or 2C horizon:

Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8
 Texture—sandy loam or sandy clay loam
 Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Noboco Series

Landform: Low stream or marine terraces and Carolina bays of the Coastal Plain

Parent material: Fluvial and marine sediments

Slope range: 0 to 4 percent

Associated Soils

- Goldsboro soils, which are moderately well drained
- Norfolk soils, which have a high water table at a depth of more than 4 feet
- Orangeburg soils, which have a redder subsoil than the Noboco soils

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Paleudults

Typical Pedon

Noboco fine sand, 0 to 2 percent slopes; in Orangeburg County; 6.3 miles northwest of Holly Hill, 1.3 miles north on U.S. Highway 15 from its junction with U.S. Highway 176, about 250 feet east on S.C. Secondary Highway 607, about 60 feet south of the centerline of the highway, about 20 feet east of a cemetery.

- Ap—0 to 8 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; abrupt smooth boundary.
- E—8 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; common coarse distinct dark grayish brown (10YR 4/2) masses of oxidized iron in upper part; moderately acid; clear wavy boundary.
- Bt1—13 to 25 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; strongly acid; gradual smooth boundary.
- Bt2—25 to 41 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common distinct clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the lower part; very strongly acid; gradual smooth boundary.
- Bt3—41 to 47 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; common distinct clay films on faces of peds; common medium prominent red (2.5YR 4/8) masses of oxidized iron; few medium distinct pale brown (10YR 6/3) and few medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.
- Bt4—47 to 58 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; common medium faint brown (10YR 5/3) and few medium prominent red (2.5YR 4/8) masses of oxidized iron; common medium distinct light gray (10YR 7/1) iron depletions; very strongly acid; clear wavy boundary.
- Bt5—58 to 72 inches; light gray (10YR 7/1), yellowish brown (10YR 5/6), red (10R 4/8), and brown (10YR 5/3) clay loam; moderate medium subangular blocky structure; red part is firm; gray, yellowish brown, and brown part is friable; lenses and pockets of loamy sand occur in the lower part; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to moderately acid in the A and E horizons; extremely acid to strongly acid in the Bt horizon

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, fine sand, fine sandy loam, or sandy loam

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 8

Texture—loamy sand, loamy fine sand, fine sand, fine sandy loam, or sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Bt horizon (upper part):

Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, fine sandy loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray at a depth of 30 to 40 inches

Bt horizon (lower part):

Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Norfolk Series

Landform: Coastal Plain uplands

Parent material: Loamy marine sediments

Slope range: 0 to 4 percent

Associated Soils

- Goldsboro soils, which are moderately well drained
- Noboco soils, which have a high water table at a depth of less than 4 feet
- Orangeburg soils, which have a redder subsoil than the Norfolk soils

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Kandiodults

Typical Pedon

Norfolk sand, 0 to 2 percent slopes; from Bamberg, 4.0 miles northwest on S.C. Highway 50 to S.C. Highway 543, about 100 feet southeast of the intersection of the highways; elevation of 240 feet.

- Ap—0 to 8 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; common fine roots; slightly acid; clear wavy boundary.
- E—8 to 14 inches; light yellowish brown (10YR 6/4) loamy sand; single grain; loose; common fine roots; some mixing of Ap material into the E horizon; moderately acid; clear wavy boundary.
- Bt1—14 to 32 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; slightly acid; gradual wavy boundary.
- Bt2—32 to 50 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds and around ironstone concretions; few fine roots; few fine pores; few medium prominent red (2.5YR 4/6) masses of oxidized iron with clear boundaries in the matrix; few small ironstone concretions; slightly acid; gradual wavy boundary.
- Bt3—50 to 57 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; common medium distinct yellowish brown (10YR 5/8) and common medium faint light yellowish brown (10YR 6/4) masses of oxidized iron with clear boundaries in the matrix; common medium prominent light gray (10YR 7/1) irregularly shaped iron depletions with clear boundaries in the matrix; moderately acid; gradual wavy boundary.
- Bt4—57 to 72 inches; light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) sandy clay loam that has pockets of clean coarse sand; moderate medium subangular blocky structure; friable; few faint clay films around old root channels; common medium prominent red (2.5YR 4/6) masses of oxidized iron with clear boundaries in the matrix; light gray (10YR 7/1) irregularly shaped iron depletions with clear boundaries in the matrix; moderately acid.

Range in Characteristics

Thickness of solum: 60 inches or more

Reaction: Strongly acid to extremely acid, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 4

Texture—sand, loamy sand, loamy fine sand, or sandy loam

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 6

Texture—loamy sand, sandy loam, fine sandy loam, or loamy fine sand

Bt horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, fine sandy loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and olive

Ocilla Series

Landform: Low uplands and stream terraces

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 3 percent

Associated Soils

- Albany soils, which have sandy surface and subsurface layers greater than 40 inches thick
- Lynchburg soils, which do not have sandy surface and subsurface layers greater than 20 inches thick
- Norfolk soils, which are well drained and do not have sandy surface and subsurface layers greater than 20 inches thick

Taxonomic Classification

Loamy, siliceous, thermic Aquic Arenic Paleudults

Typical Pedon

Ocilla sand, 0 to 3 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 9.1 miles southeast on U.S. Highway 78 to S.C. Highway 61, about 4.6 miles southeast on S.C. Highway 61 to a field road, 0.7 mile southwest on the field road to a T-intersection with a field road and a logging road, 0.7 mile southwest on the field road, 20 feet north of the logging road; elevation of 135 feet.

Ap—0 to 7 inches; grayish brown (10YR 5/2) sand; moderate medium granular structure; very friable; common fine and medium roots; moderately acid; abrupt smooth boundary.

E—7 to 23 inches; light olive brown (2.5Y 5/4) sand; single grain; loose; few fine and very fine roots; slightly acid; gradual wavy boundary.

Bt—23 to 35 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common medium prominent red (2.5YR 4/8) and common medium distinct strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; common medium prominent gray (10YR 6/1) irregularly shaped iron depletions with diffuse boundaries in the matrix; strongly acid; gradual wavy boundary.

Btg—35 to 65 inches; light gray (10YR 7/1) sandy clay loam; moderate medium subangular blocky structure; friable; few clay films on faces of peds; few fine and medium roots; many coarse prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

C—65 to 80 inches; brownish yellow (10YR 6/6) and light gray (10YR 7/1) sandy clay loam that is stratified with loamy sand; massive; friable; common medium prominent red (2.5YR 5/8) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Strongly acid or very strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2

Texture—sand, loamy fine sand, fine sand, loamy coarse sand, or loamy sand

E horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, sand, fine sand, or loamy coarse sand

Bt horizon:

Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8

Texture—sandy clay loam, sandy loam, or fine sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and olive

Btg horizon (where present):

Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 or 2

Texture—sandy clay loam; coarse sandy loam, sandy loam, fine sandy loam, and sandy clay in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and olive

C horizon:

Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 to 8

Texture—sandy loam, sandy clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, and olive

Ogeechee Series

Landform: Upland drainageways, depressions, and Carolina bays

Parent material: Loamy and clayey marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Coxville soils, which have more clay in the subsoil than the Ogeechee soils
- Lynchburg and Rains soils, which lack a 20 percent clay decrease within 60 inches of the surface
- Lumbee soils, which have sola 40 inches thick or less

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Endoaquults

Typical Pedon

Ogeechee loamy sand, 0 to 2 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 13.4 miles south on U.S. Highway 301 to S.C. Highway 64, about 3.2 miles east on S.C. Highway 64 to an unnumbered, unpaved county road, 200 feet north on the county road, 75 feet east of the road; elevation of 142 feet.

Ap—0 to 7 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; many fine and very fine roots; slightly acid; clear wavy boundary.

E—7 to 14 inches; light brownish gray (10YR 6/2) and light gray (2.5Y 7/2) loamy fine sand; weak fine granular structure; very friable; common fine roots; slightly acid; clear wavy boundary.

Btg1—14 to 24 inches; gray (10YR 5/1) sandy clay loam; moderate medium subangular blocky structure; friable; many fine and very fine roots; common

medium prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg2—24 to 38 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; friable; common stripped pockets of light brownish gray (10YR 6/2) sand; few fine roots; common medium distinct dark grayish brown (10YR 4/2) masses of oxidized iron; extremely acid; gradual wavy boundary.

BCg—38 to 52 inches; gray (10YR 5/1) and dark grayish brown (10YR 4/2) sandy clay that has pockets of loamy sand; weak coarse subangular blocky structure; firm; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

Cg—52 to 80 inches; gray (10YR 5/1) and dark grayish brown (10YR 4/2) clay that is stratified with loamy sand; massive; extremely firm and dense; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; extremely acid.

Range in Characteristics

Thickness of solum: 50 to 80 inches

Reaction: Extremely acid to slightly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2

Texture—loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand, or loamy coarse sand

Eg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand, or loamy coarse sand

Btg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—clay loam or sandy clay loam; sandy clay or clay occurs below the control section in some pedons

Redoximorphic features—masses of oxidized iron in shades of yellow, brown, and red; iron depletions in shades of gray

BCg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay or is stratified with these textures

Redoximorphic features—masses of oxidized iron in shades of yellow, brown, and red; iron depletions in shades of gray

Cg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2

Texture—sand to clay, commonly stratified

Redoximorphic features—masses of oxidized iron in shades of yellow, brown, and red; iron depletions in shades of gray

Orangeburg Series

Landform: Coastal Plain uplands

Parent material: Loamy and clayey marine sediments

Slope range: 0 to 4 percent

Associated Soils

- Goldsboro soils, which are moderately well drained
- Lucy and Wagram soils, which have a 20 to 40 inch thick sandy surface layer
- Norfolk soils, which have a yellower subsoil than the Orangeburg soils

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Kandiodults

Typical Pedon

Orangeburg loamy sand, 2 to 6 percent slopes; from Bamberg, 12.1 miles southwest on U.S. Highway 301 to S.C. Highway 64, about 3.0 miles northwest to County Road S-6-89, about 0.8 mile on the county road, west onto a field road, 1,000 feet on the field road, 300 feet north of the road; elevation of 210 feet.

Ap—0 to 7 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; common fine and few medium roots; very strongly acid; clear smooth boundary.

E—7 to 16 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

Bt1—16 to 34 inches; yellowish red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of pedis; few fine roots; very strongly acid; gradual wavy boundary.

Bt2—34 to 54 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of pedis; very strongly acid; gradual wavy boundary.

Bt3—54 to 66 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of pedis; strongly acid; gradual wavy boundary.

Bt4—66 to 80 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of pedis; few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of solum: 72 to 96 inches

Reaction: Very strongly acid or strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6

Texture—sand, loamy sand, loamy fine sand, or sandy loam

E horizon:

Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 6

Texture—sand or loamy sand

Bt horizon (upper part):

Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8

Texture—sandy clay loam

Bt horizon (lower part):

Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8

Texture—sandy clay loam or sandy clay

Redoximorphic features—masses of oxidized iron in shades of brown

BC horizon (where present):

Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8

Texture—sandy loam, sandy clay loam, or sandy clay

Redoximorphic features—masses of oxidized iron in shades of brown

Osier Series

Landform: Drainageways and stream channels

Parent material: Sandy fluvial and marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Alaga soils, which are excessively drained
- Echaw soils, which are moderately well drained
- Rains soils, which have argillic horizons

Taxonomic Classification

Siliceous, thermic Typic Psammaquents

Typical Pedon

Osier loamy sand, 0 to 2 percent slopes, frequently flooded; from the intersection of U.S. Highways 301 and 78 in Bamberg, 16 miles southwest on U.S. Highway 301 to County Road S-5-31, about 5.6 miles southeast on the county road to a field road, 1.1 miles south to an irrigation canal road, 350 feet west of the canal road, 100 feet south of a logging road; elevation of 88 feet.

A—0 to 3 inches; very dark brown (10YR 2/2) loamy sand; weak fine crumb structure; friable; common fine and medium roots; neutral; clear wavy boundary.

Cg1—3 to 42 inches; dark gray (10YR 4/1) loamy sand; single grain; loose; common fine and few medium roots; slightly alkaline; gradual wavy boundary.

Cg2—42 to 58 inches; light brownish gray (10YR 6/2) coarse sand; single grain; loose; slightly alkaline; gradual wavy boundary.

Cg3—58 to 80 inches; light gray (2.5Y 7/2) coarse sand; single grain; loose; slightly alkaline.

Range in Characteristics

Thickness of sands: More than 80 inches

Reaction: Extremely acid to slightly alkaline, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2

Texture—fine sandy loam, loamy fine sand, loamy sand, sand, or fine sand

Cg horizon:

Color—hue of 7.5YR to 5Y or 5GY, value of 3 to 8, and chroma of 1 or 2

Texture—loamy fine sand, loamy sand, sand, or fine sand

Redoximorphic features (where present)—masses of oxidized iron in shades of brown and yellow; iron depletions in shades of gray

Note: The Osier soils in Bamberg County have a soil reaction that ranges from moderately acid to slightly alkaline, which is outside the Range in Characteristics for the series. This difference, however, does not significantly affect classification or the use and management of the soils.

Plummer Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Echaw and Seagate soils, which have spodic horizons
- Ocilla soils, which do not have sandy surface and subsurface layers more than 40 inches thick

Taxonomic Classification

Loamy, siliceous, thermic Grossarenic Paleaquults

Typical Pedon

Plummer loamy sand, 0 to 2 percent slopes; 11.8 miles south of Bamberg on U.S. Highway 301, left on an unmarked dirt road, 1.2 miles on the dirt road, right on a logging road, 500 feet on the logging road, 10 feet north of the road; elevation of 170 feet.

Oi—2 inches to 0; decomposing hardwood leaves and pine needles.

A—0 to 8 inches; black (10YR 2/1) loamy sand; single grain; loose; common fine and few medium and coarse roots; extremely acid; gradual smooth boundary.

E1—8 to 30 inches; grayish brown (10YR 5/2) sand; 25 percent uncoated white (10YR 8/1) sand grains; single grain; loose; common fine and few medium and coarse roots; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

E2—30 to 50 inches; light gray (10YR 7/1) sand; single grain; loose; few fine roots; common coarse prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg1—50 to 62 inches; gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure; friable; common medium prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg2—62 to 75 inches; gray (10YR 5/1) sandy clay loam; common medium distinct light gray (10YR 7/1) iron depletions; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

Btg3—75 to 80 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/4) masses of oxidized iron with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: More than 80 inches

Reaction: Extremely acid to strongly acid, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR to 5Y, value of 2 to 4, and chroma of 1 or 2 or neutral in hue and has value of 2 to 4

Texture—sand, fine sand, loamy sand, or loamy fine sand

E horizon:

Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 or 2 or neutral in hue and has value of 5 to 8

Texture—sand, fine sand, loamy sand, or loamy fine sand

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

BE horizon (where present):

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2 or neutral in hue and has value of 5 to 7

Texture—loamy sand or loamy fine sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Btg horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Note: The Plummer soils in Bamberg County are considered taxadjuncts to the series because they classify as Kandiaquults. This difference, however, does not significantly affect the use and management of the soils.

Rains Series

Landform: Shallow depressions and broad interstream divides

Parent material: Loamy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Coxville soils, which have more clay in the top 20 inches of the Bt horizon than the Rains soils
- Lynchburg soils, which are somewhat poorly drained
- Goldsboro soils, which are moderately well drained

Taxonomic Classification

Fine-loamy, siliceous, thermic Typic Paleaquults

Typical Pedon

Rains fine sandy loam, 0 to 2 percent slopes; 11.2 miles west of the intersection of U.S. Highways 301 and 78 in Bamberg to County Road S-5-38, 1.0 mile north on the county road to an unpaved, unnumbered county road, 700 feet on the county road to a field road, 200 feet south on the field road, 75 feet west of the road; elevation of 260 feet.

Ap—0 to 8 inches; black (10YR 2/1) fine sandy loam; moderate medium granular structure; friable; many fine and medium roots; strongly acid; clear wavy boundary.

Eg—8 to 12 inches; dark gray (10YR 4/1) loamy sand; weak fine granular structure; friable; few medium and common fine roots; strongly acid; clear wavy boundary.

Btg1—12 to 28 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; friable; very few fine clay films along root channels; few fine and medium roots; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg2—28 to 36 inches; gray (10YR 5/1) sandy clay loam; moderate medium subangular blocky structure; friable; very few fine clay films along root channels; few fine roots; common medium prominent yellowish brown (10YR 5/6) masses of

oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg3—36 to 47 inches; gray (10YR 6/1) sandy clay; weak medium subangular blocky structure; firm; many medium prominent strong brown (7.5YR 5/6) and red (2.5YR 4/6) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

Btg4—47 to 63 inches; gray (10YR 6/1) sandy clay; weak medium subangular blocky structure; firm; many coarse prominent yellowish red (5YR 5/6) and common fine red (2.5YR 4/6) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

BCg—63 to 80 inches; light gray (2.5Y 7/2) and gray (10YR 6/1) sandy clay; weak very coarse subangular blocky structure; very firm; common medium prominent red (2.5YR 4/6) and brownish yellow (10YR 6/6) masses of oxidized iron; extremely acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2 or neutral in hue and has value of 2 to 5

Texture—sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

E horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sandy loam, fine sandy loam, or loam in the upper part; sandy clay loam, clay loam, or sandy clay in the lower part

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, sandy clay loam, or sandy clay

Redoximorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of brown, yellow, olive, and gray

Rembert Series

Landform: Upland drainageways, depressions, and Carolina bays

Parent material: Clayey marine sediments

Slope range: 0 to 2 percent

Associated Soils

- McColl soils, which have perched water tables
- Rains soils, which have less clay in the subsoil than the Rembert soils

Taxonomic Classification

Fine, kaolinitic, thermic Typic Endoaquults

Typical Pedon

Rembert sandy loam, 0 to 2 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 0.6 mile east on U.S. Highway 78 to S.C. Highway 362, about 3.3 miles southeast on S.C. Highway 362 to County Road 86, about 0.35 mile east on the county road to its intersection with a field road, right on the field road, 1.1 miles on the road, 40 feet west of the road, 30 feet south of a drainage ditch; elevation of 140 feet.

Ap—0 to 7 inches; very dark gray (10YR 3/1) sandy clay loam; moderate fine granular structure; friable; many fine and very fine roots; very strongly acid; clear wavy boundary.

E—7 to 13 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine roots; common fine prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix; extremely acid; clear wavy boundary.

Btg1—13 to 40 inches; dark gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; common prominent clay films; many fine and very fine roots; common fine prominent brown (7.5YR 4/4) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

Btg2—40 to 51 inches; gray (10YR 5/1) sandy clay; weak medium subangular blocky structure; firm; few faint clay films; few fine roots; common medium distinct light gray (10YR 7/1) iron depletions; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

BCg—51 to 63 inches; gray (10YR 6/1 and 5/1) coarse sandy loam; weak coarse subangular blocky structure; friable; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron with clear boundaries in the matrix; extremely acid; gradual wavy boundary.

Cg1—63 to 70 inches; gray (10YR 6/1) loamy coarse sand; massive; very friable; extremely acid; gradual wavy boundary.

Cg2—70 to 80 inches; light gray (10YR 7/1) coarse sand; single grain; loose; extremely acid.

Range in Characteristics

Thickness of solum: 40 to more than 60 inches

Reaction: Extremely acid to strongly acid throughout the profile

A or Ap horizon:

Color—hue of 10YR to 5Y, value of 2 to 4, and chroma of 1 or 2 or neutral in hue and has value of 2 to 4

Texture—loam, sandy loam, fine sandy loam, sandy clay loam, or clay loam

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—loam, sandy loam, fine sandy loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2

Texture—clay loam, sandy clay, or clay; thin subhorizons of sandy clay loam in some pedons

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—coarse sandy loam, sandy loam, sandy clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Cg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay or is stratified with these textures

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray

Seagate Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 2 percent

Associated Soils

- Echaw soils, which are moderately well drained
- Byars, Coxville, and Rembert soils, which have more clay in the subsoil than the Seagate soils

Taxonomic Classification

Sandy over loamy, siliceous, thermic Ultic Haplohumods

Typical Pedon

Seagate sand, 0 to 2 percent slopes; 13.4 miles south of Bamberg on U.S. Highway 301, about 3.2 miles southeast on S.C. Highway 64 to an unnumbered, unpaved county road, 0.9 mile north on the county road, 500 feet west onto a road for a power line right-of-way, 40 feet north of the road; elevation of 168 feet.

A—0 to 6 inches; very dark gray (10YR 3/1) sand; single grain; loose; common medium and coarse roots; moderately acid; clear wavy boundary.

E—6 to 9 inches; grayish brown (10YR 5/2) sand; 40 percent uncoated white (10YR 8/1) sand grains; single grain; loose; common fine and medium roots; moderately acid; clear wavy boundary.

Bh—9 to 16 inches; black (7.5YR 2.5/1) sand; single grain; moderately cemented; few fine and medium roots; strongly acid; gradual wavy boundary.

E¹—16 to 25 inches; grayish brown (10YR 5/2) sand; single grain; loose; common coarse distinct brown (7.5YR 4/3) organic stains; few coarse and common fine and medium roots; strongly acid; gradual wavy boundary.

E²—25 to 30 inches; light brownish gray (10YR 6/2) sand; single grain; loose; few fine organic stains; few coarse and common fine and medium roots; common medium

prominent strong brown (7.5YR 5/8) masses of oxidized iron with diffuse boundaries in the matrix; strongly acid; clear wavy boundary.

Btg1—30 to 38 inches; gray (10YR 5/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine prominent yellowish red (5YR 4/6) masses of oxidized iron with distinct boundaries in the matrix and common medium distinct pale brown (10YR 6/3) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Btg2—38 to 48 inches; gray (10YR 6/1) sandy clay loam that has pockets of stripped sand; weak medium subangular blocky structure; friable; many medium prominent yellowish brown (10YR 5/6) and brown (7.5YR 4/2) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

BCg1—48 to 68 inches; gray (10YR 6/1) sandy loam that has stratified layers of brown (7.5YR 4/2) sand; weak coarse subangular blocky structure; friable; many medium distinct pale brown (10YR 6/3) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

BCg2—68 to 80 inches; gray (10YR 6/1) sandy clay loam that has stratified layers of brown (7.5YR 4/2) sand; weak coarse subangular blocky structure; firm; many medium distinct pale brown (10YR 6/3) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Range in Characteristics

Thickness of solum: 36 to more than 60 inches

Reaction: Extremely acid to moderately acid, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 to 3

Texture—fine sand or sand

E horizon:

Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 to 3 or neutral in hue and has value of 5 to 8

Texture—fine sand or sand

Redoximorphic features—masses of oxidized iron in shades of yellow and brown

Bh horizon:

Color—hue of 5YR to 2.5Y, value of 2 to 5, and chroma of 1 to 4 or neutral in hue and has value of 2 to 5

Texture—sand, fine sand, or loamy fine sand

E' horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 4

Texture—fine sand or sand

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of gray

Btg horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2 or neutral in hue and has value of 5 to 7

Texture—sandy clay loam or clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of gray

BCg horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2 or neutral in hue and has value of 5 to 7

Texture—sandy clay loam or clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow and brown; iron depletions in shades of gray

Troup Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 0 to 10 percent

Associated Soils

- Albany and Blanton soils, which have a seasonally high water table within 6 feet of the surface
- Lucy and Wagram soils, which have sandy surface and subsurface layers 20 to 40 inches thick
- Orangeburg soils, which do not have sandy surface and subsurface layers as thick as 40 inches

Taxonomic Classification

Loamy, siliceous, thermic Grossarenic Kandiudults

Typical Pedon

Troup sand, 0 to 6 percent slopes; about 6.0 miles south of Denmark on U.S. Highway 321, about 0.75 mile west of the junction of U.S. Highway 321 and S.C. Highway 232, about 0.5 mile south of S.C. Highway 232 on a county road, 20 feet west of the road; elevation of 255 feet.

A—0 to 5 inches; brown (10YR 5/3) sand; single grain; loose; common fine and few medium and coarse roots; strongly acid; clear wavy boundary.

E1—5 to 34 inches; very pale brown (10YR 7/4) sand; single grain; loose; few light gray (10YR 7/2) uncoated sand grains; common fine and few medium and coarse roots; very strongly acid; gradual wavy boundary.

E2—34 to 52 inches; very pale brown (10YR 7/4) sand; single grain; loose; few fine roots; common medium faint brownish yellow (10YR 6/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

BE—52 to 57 inches; 90 percent strong brown (7.5YR 5/8) and 10 percent brownish yellow (10YR 6/6) loamy sand; weak medium subangular blocky structure; very friable; few fine pores; very strongly acid; gradual wavy boundary.

Bt1—57 to 66 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine pores; very strongly acid; gradual wavy boundary.

Bt2—66 to 80 inches; red (2.5YR 4/8) and yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few small plinthite nodules (less than 2 percent); very strongly acid.

Range in Characteristics

Thickness of solum: More than 80 inches

Reaction: Very strongly acid to moderately acid in the A, Ap, E, and BE horizons, except where lime has been applied; very strongly acid or strongly acid in the Bt horizon

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4

Texture—coarse sand, sand, fine sand, loamy sand, or loamy fine sand

E horizon:

Color—hue of 5YR to 10YR, value of 4 to 8, and chroma of 3 to 8; uncoated sand has chroma of 1 or 2

Texture—coarse sand, sand, fine sand, loamy sand, or loamy fine sand

BE horizon:

Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—loamy sand or sandy loam

Bt horizon:

Color—hue of 10R to 10YR, value of 4 to 7, and chroma of 4 to 8

Texture—sandy loam, fine sandy loam, or sandy clay loam

Redoxomorphic features (where present)—masses of oxidized iron in shades of red, yellow, and brown in the lower part of the horizon

Uchee Series

Landform: Gently rolling and undulating slopes of the Coastal Plain

Parent material: Sandy and loamy marine sediments

Slope range: 2 to 6 percent

Associated Soils

- Ailey, Lucy, and Wagram soils, which have kandic horizons
- Blanton and Troup soils, which have sandy surface and subsurface layers more than 40 inches thick

Taxonomic Classification

Loamy, siliceous, thermic Arenic Hapludults

Typical Pedon

Uchee sand, 2 to 6 percent slopes; about 2.1 miles south of Bamberg on U.S. Highway 601, about 3,300 feet west on S.C. Highway 41, about 600 feet south of the highway, in an open field.

Ap—0 to 3 inches; brown (10YR 5/3) sand; single grain; loose; common fine and medium roots; moderately acid; abrupt wavy boundary.

E1—3 to 14 inches; light yellowish brown (10YR 6/4) sand; weak coarse subangular blocky structure; very friable; common medium roots; moderately acid; gradual wavy boundary.

E2—14 to 24 inches; yellow (10YR 7/6) sand; weak coarse subangular blocky structure; very friable; few fine roots; moderately acid; clear wavy boundary.

Bt1—24 to 42 inches; strong brown (7.5YR 5/8) sandy loam; moderate medium subangular blocky structure; friable; few fine roots; very few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—42 to 51 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; firm; very few faint clay films on faces of peds; few fine prominent red (2.5YR 4/8) and common medium prominent yellow (10YR 7/8) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

BC1—51 to 55 inches; strong brown (7.5YR 5/8) and yellowish brown (10YR 5/8) sandy clay loam; weak coarse subangular blocky structure; firm; few brittle peds; common medium prominent red (2.5YR 4/8) masses of oxidized iron; strongly acid; gradual wavy boundary.

BC2—55 to 65 inches; yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), and yellowish red (5YR 4/6) sandy clay loam; weak coarse subangular blocky

structure; firm; few brittle peds; common medium prominent light brownish gray (10YR 6/2) irregularly shaped iron depletions with clear boundaries in the matrix; common pockets of kaolin; strongly acid; gradual wavy boundary.
 BC3—65 to 80 inches; yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), and yellowish red (5YR 4/6) sandy clay loam; weak medium subangular blocky structure; very friable; light gray (10YR 7/1) pockets of kaolin clay; strongly acid.

Range in Characteristics

Thickness of solum: 40 to 60 inches or more

Reaction: Very strongly acid or strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR, value of 3 to 6, and chroma of 2 to 4

Texture—loamy sand, loamy coarse sand, sand, or loamy fine sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 6

Texture—loamy sand, loamy fine sand, or sand

Bt horizon:

Color—hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—sandy loam or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow, red, and brown

BC horizon:

Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—sandy loam, loamy sand, or sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of yellow, red, and brown; iron depletions in shades of brown and gray

C horizon:

Color—hue of 2.5YR to 10YR, value of 5 to 7, and chroma of 4 to 8

Texture—sandy loam or sandy clay loam; streaks or strata of coarser and finer textured material are common

Redoximorphic features—masses of oxidized iron in shades of yellow, red, and brown; iron depletions in shades of brown and gray

Wagram Series

Landform: Coastal Plain uplands

Parent material: Sandy and loamy marine sediments

Slope range: 2 to 6 percent

Associated Soils

- Blanton soils, which have sandy surface and subsurface layers more than 40 inches thick
- Lucy soils, which have a redder subsoil than the Wagram soils
- Norfolk soils, which have sandy surface and subsurface layers less than 20 inches thick

Taxonomic Classification

Loamy, siliceous, thermic Arenic Kandiodults

Typical Pedon

Wagram sand, 2 to 6 percent slopes; 0.8 mile west of Govan on S.C. Highway 22, about 1.7 miles northwest on S.C. Highway 27, west onto a county road, 450 feet from the intersection of S.C. Highway 27 and the county road, 20 feet north of the county road.

A—0 to 9 inches; brown (10YR 5/3) sand; single grain; loose; common medium roots; strongly acid; clear wavy boundary.

E1—9 to 27 inches; very pale brown (10YR 7/4) sand; single grain; loose; common light gray (10YR 7/2) uncoated sand grains; few fine and medium roots; few fine faint light yellowish brown (10YR 6/4) masses of oxidized iron; strongly acid; gradual wavy boundary.

E2—27 to 33 inches; very pale brown (10YR 7/3) sand; single grain; loose; few light gray (10YR 7/2) uncoated sand grains; few fine and medium roots; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Bt1—33 to 44 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine and medium roots; few fine pores; few medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid; gradual wavy boundary.

Bt2—44 to 61 inches; reddish yellow (7.5YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; very strongly acid; gradual wavy boundary.

Bt3—61 to 74 inches; reddish yellow (7.5YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine pores; common medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; few medium prominent very pale brown (10YR 7/3) clay depletions; very strongly acid; gradual wavy boundary.

Bt4—74 to 80 inches; reddish yellow (7.5YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine pores; few medium prominent very pale brown (10YR 7/3) clay depletions; light gray (10YR 7/1) irregularly shaped iron depletions with clear boundaries in the matrix; common medium distinct brownish yellow (10YR 6/8) masses of oxidized iron and common medium prominent red (2.5YR 4/8) masses of oxidized iron with clear boundaries in the matrix; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches

Reaction: Strongly acid or very strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4

Texture—loamy sand, loamy fine sand, fine sand, or sand

E horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 or 4; uncoated sand has chroma of 1 or 2

Texture—loamy sand, loamy fine sand, sand, or fine sand

Bt horizon (upper part):

Color—hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 4 to 8

Texture—sandy clay loam or sandy loam

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow

Bt horizon (lower part):

Color—hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 4 to 8

Texture—sandy clay loam

Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of brown, yellow, olive, and gray below 72 inches

Wahee Series

Landform: Stream terraces

Parent material: Clayey marine and fluvial sediments

Slope range: 0 to 2 percent

Associated Soils

- Meggett and Rembert soils, which are poorly drained
- Ogeechee soils, which are poorly drained and have less clay in the subsoil than the Wahee soils

Taxonomic Classification

Fine, mixed, thermic Aeric Endoaquults

Typical Pedon

Wahee loamy sand, 0 to 2 percent slopes; from the intersection of U.S. Highways 301 and 78 in Bamberg, 11.4 miles east on U.S. Highway 78 to a county road, left onto an unnumbered county road, 1 mile on the county road to an unpaved river access road, right 0.3 mile to a field trail, 0.1 mile southeast on the trail, 40 feet southwest of the trail; elevation of 105 feet.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine and very fine roots; slightly acid; abrupt smooth boundary.

E—6 to 9 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; friable; common very fine and fine roots; moderately acid; clear wavy boundary.

Bt—9 to 13 inches; pale brown (10YR 6/3) sandy clay; weak medium subangular blocky structure; friable; few faint clay films on face of peds; common fine roots; common medium prominent gray (N 6/) irregularly shaped iron depletions with clear boundaries in the matrix; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; moderately acid; clear wavy boundary.

Btg1—13 to 21 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; very few faint clay films on face of peds; few fine roots; common medium prominent light yellowish brown (10YR 6/4) and strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Btg2—21 to 33 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; very firm; few distinct clay films on faces of peds; few fine roots; common fine prominent olive brown (2.5Y 4/4) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

Btg3—33 to 44 inches; gray (10YR 5/1) clay; moderate coarse subangular blocky structure; very firm; few distinct clay films on faces of peds; common medium distinct dark grayish brown (10YR 4/2) and few fine prominent strong brown

(7.5YR 5/6) masses of oxidized iron with clear boundaries in the matrix; strongly acid; gradual wavy boundary.

BCg—44 to 50 inches; gray (10YR 6/1) sandy loam; weak coarse subangular blocky structure; friable; very strongly acid; clear wavy boundary.

Cg—50 to 80 inches; pale yellow (2.5Y 8/2) coarse sand; single grain; loose; strongly acid.

Range in Characteristics

Thickness of solum: 40 to more than 60 inches

Reaction: Very strongly acid or strongly acid throughout the profile, except where lime has been applied

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 to 3 or neutral in hue and has value of 2 to 5

Texture—loam, silt loam, loamy sand, sandy loam, fine sandy loam, or very fine sandy loam

E horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 to 4

Texture—loam, silt loam, loamy sand, sandy loam, fine sandy loam, or very fine sandy loam

Bt horizon:

Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 8

Texture—clay, clay loam, sandy clay loam, sandy clay, or silty clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray, olive, and white

Btg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray, olive, and white

BCg horizon:

Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or neutral in hue and has value of 4 to 7

Texture—sand, loamy sand, sandy clay loam, sandy clay, or clay or is stratified with these textures

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray, olive, and white

Cg horizon:

Color—hue of 10YR to 5Y, value of 4 to 8, and chroma of 1 or 2 or neutral in hue and has value of 4 to 8

Texture—sandy loam, sandy clay loam, sandy clay, or clay

Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown; iron depletions in shades of gray, olive, and white

Formation of the Soils

This section relates the factors of soil formation to the soils in Bamberg County and explains the processes of soil formation.

Factors of Soil Formation

The major factors of soil formation are parent material, climate, living organisms, relief, and time. Climate and living organisms are the active factors of soil formation. Their effect on the parent material is modified by relief and by the length of time that the parent material has been in place. The relative importance of each factor differs from one area to another. In some areas one factor dominates the formation of a soil and determines most of its properties. In most areas, however, the interaction of all five factors determines the kind of soil that forms.

Some understanding of the soil-forming processes can be gained by considering each of the five factors separately. It should be remembered, however, that each of the five factors is affected by all of the others.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It significantly affects the mineralogical and chemical composition of the soil. All of the soils in Bamberg County formed in material distinctly removed from its origin. Most of the soils formed in marine or fluvial deposits. These deposits differ widely in content of sand, silt, and clay.

Three Major Land Resource Areas (MLRAs) encompass Bamberg County—the Southern Coastal Plain in the northern part of the county, the Sand Hills in the western portion of the county, and the Atlantic Coastal Flatwoods in the middle and eastern portions of Bamberg County.

Soils in the Southern Coastal Plain generally are better drained than soils in the Atlantic Coast Flatwoods, and they have either siliceous or kaolinitic mineralogy. The more common soils include Barnwell, Noboco, Norfolk, and Orangeburg soils.

Sand Hills soils, as the name indicates, are sandy throughout. These soils, which are on the very old sand dune deposits, are excessively drained and have very low nutrient holding capacity. They have siliceous mineralogy, which is dominated by quartz. Examples of soils in this area are Alaga, Echaw, and Foxworth soils.

Soils in the Atlantic Coast Flatwoods generally are less well drained than soils in the other two MLRAs. Textures of these soils are dominantly loamy and clayey, but they can range to sandy in a few places. Examples of soils that occur in this area are Byars, Lynchburg, and Rains soils.

Fluvial (alluvial) materials have been deposited along streams and in drainageways. These deposits range from gravel to clay and a few organic sediments. Most show little evidence of soil development. Examples of fluvial soils are Hobonny and Johnston soils.

Climate

Climate, particularly precipitation and temperature, affects physical, chemical, and biological activities in soils. After it penetrates the surface, rainwater transports the dissolved mineral and organic material throughout the profile. Large amounts of rainwater leach soluble bases and transfer the less soluble and fine-textured soil material downward through the profile. The amount of water that moves downward through the soil depends on the amount of rainfall, the length of the frost-free period, the topography, and the permeability of the soil.

A high amount of rainfall, warm temperatures, and a long frost-free period have markedly affected the characteristics of soils in Bamberg County. The rainfall is fairly well distributed throughout the year. The warm, humid climate has accelerated weathering of the parent material and promoted the growth and activity of living organisms.

Living Organisms

The number and kinds of plants and animals that live in and on the soils are determined mainly by the climate and, to a lesser extent, by the parent material, the topography, and the age of the soils. Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of mineral material and the decomposition of organic material. The larger plants alter the microclimate of the soils, furnish organic matter, and transfer chemical elements from the subsoil to the surface layer.

Most of the fungi, bacteria, and other micro-organisms in the soils of Bamberg County are in the upper few inches of the profile. The activity of earthworms and other small invertebrates is chiefly in the A horizon and the upper part of the B horizon. These organisms slowly but continuously mix the soil material. Bacteria and fungi decompose organic material and release plant nutrients.

Animals play a secondary role in soil formation, but their influence is very significant. As they eat plants, the animals help to return plant material to the soil.

The native vegetation is chiefly loblolly pine, longleaf pine, oak, and hickory in the better drained areas of Bamberg County and sweetgum, blackgum, yellow-poplar, maple, tupelo, ash, and cypress in the wetter areas. Large trees affect soil formation by bringing nutrients up from varying depths in the soils. Also, as the roots of these trees decay, they provide large openings to be filled by material from the overlying horizons.

Relief

The underlying geologic formations, the geologic history of the region, and the effects of dissection by river and streams largely determine the relief of an area. Relief, or topography, affects the formation of soils by influencing the quantity of infiltrating water, the rate of surface water runoff, the rate of drainage in the soil, the soil temperature, and the rate of geologic erosion. Relief can alter the effects of climate on the parent material to the extent that several different kinds of soils may form from the same kind of parent material. Relief also affects the amount of radiant energy absorbed by the soils, which in turn affects the type of native vegetation on the soils.

Relief in Bamberg County is gentle, ranging from nearly level to sloping (0 to 10 percent). The nearly level soils are common on upland flats and floodplains. Most of the nearly level soils in the Atlantic Coast Flatwoods are often wet because of frequent flooding or a seasonal high water table, and they typically have a slow rate of surface water runoff. These soils typically have a subsoil or substratum that is gray or mottled

gray, and they are somewhat poorly drained or poorly drained. Coxville and Johnston soils are examples.

The gently sloping and sloping soils generally are excessively drained, well drained, or moderately well drained. On the gently sloping and sloping soils, geologic erosion is slight, surface water runoff is medium or rapid, and water infiltration is optimal.

Translocation of bases and clay has typically occurred downward through the soil.

In the upland soils of the Atlantic Coastal Plain, the parent materials and other soil-forming factors are essentially the same and relief has modified the effects of the other soil-forming factors. For example, Goldsboro and Norfolk soils formed in similar parent materials. Norfolk soils, which are slightly higher on the landscape than the adjacent Goldsboro soils, are well drained, and the Goldsboro soils are moderately well drained.

Time

The length of time required by soil formation depends largely on the intensity of the other soil-forming factors. The soils in Bamberg County range from immature, or young, to mature. Most of the soils in the higher areas on uplands have well developed horizons. Examples are Nankin and Orangeburg soils. In areas where the parent material is very sandy and in areas that are subject to flooding, little soil development has taken place. Examples of sandy soils are Alaga and Foxworth soils. Examples of soils that are subject to flooding are Hobonny and Johnston soils. These alluvial soils are commonly stratified and have an irregular distribution of organic matter in the profile.

Morphology of the Soils

The results of the soil-forming factors are evident by the different layers, or soil horizons, in a soil profile. The soil profile extends from the surface down to materials that are little altered by the soil-forming processes.

Most soils in Coastal Plain regions have four major horizons—the A, E, B, and C horizons. These major horizons may be further subdivided by the use of numbers and letters to indicate changes within a horizon. For example, a Bt horizon is a B horizon that has an accumulation of clay.

The A horizon is a surface layer that has the largest accumulation of organic matter in the profile. In undisturbed areas it is called the A horizon, and in areas that have been cleared of trees and plowed, it is called the Ap horizon.

The E horizon is the zone of maximum leaching, or eluviation, of clay and iron in the profile. It is the lightest colored horizon in areas where considerable leaching has taken place. This horizon is well expressed in Ailey and Uchee soils.

The B horizon underlies the A or E horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds leached from the surface layer. Examples of soils where clay has accumulated (Bt horizons) are the Barnwell and Troup soils. Examples of soils where humus has accumulated (Bh horizons) are the Echaw and Seagate soils. The B horizon generally has a blocky structure. It generally is firmer and lighter in color than the A and E horizons and darker than the C horizon.

The C horizon is below the B horizon or, in some cases, below the A horizon, such as is in the Alaga soils. It consists of materials that are little altered by the soil-forming processes, but it can be modified by weathering.

Processes of Horizon Differentiation

In Bamberg County, several processes are involved in the formation of soil horizons. These processes include the accumulation of organic matter, the leaching of soluble

salts, the reduction and transfer of iron, the formation of soil structure, and the formation and translocation of clay minerals. These processes are continually taking place, generally at the same time throughout the profile. Such processes have been going on for thousands of years.

The accumulation and incorporation of organic matter may take place as the plant residue decomposes. These additions darken the surface layer and help to form the A horizon. In many places, much of the surface layer has been eroded away or has been mixed with the materials from underlying layers through cultivation. Organic matter, once lost, normally takes a long time to replace. In Bamberg County, the organic matter content of the surface layer ranges from low in sandy soils, such as Alaga, to high in floodplain soils, such as Hobonny. A low or moderate content of organic matter is common for most of the soils in the county.

For soils to have distinct subsoil horizons, some of the lime and soluble salts must be leached before the translocation of clay minerals takes place. Among the factors that affect this leaching are the kinds of salts originally present, the depth to which the soil solution percolates, and the texture of the soil profile.

Well drained and moderately well drained soils in the survey area have a yellowish brown to red subsoil. These colors are caused mainly by thin coatings of iron oxides on sand and silt grains. The soil structure is weak to moderate subangular blocky, and the subsoil contains more clay than the overlying surface horizons.

The reduction and transfer of iron, called gleying, takes place mainly in the wetter, more poorly drained soils. Moderately well drained and somewhat poorly drained soils, such as Goldsboro and Lynchburg soils, have yellowish brown and strong brown redoximorphic features, which indicate the segregation of iron. In poorly drained soils, such as Coxville and Rains soils, the subsoil and underlying materials are grayish, which indicates reduction and transfer of iron by removal in solution.

References

- (1) American Association of State Highway and Transportation Officials. 1986. Standard specifications for highway materials and methods of sampling and testing. Ed. 14, 2 vols.
- (2) American Society for Testing and Materials. 1993. Standard classification of soils for engineering purposes. ASTM Stand. D 2487.
- (3) United States Department of Agriculture. 1966. Soil survey of Bamberg County, South Carolina.
- (4) United States Department of Agriculture, Soil Conservation Service. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. U.S. Dep. Agric. Handb. 436.
- (5) United States Department of Agriculture, Soil Conservation Service. 1993. Soil survey manual. Soil Surv. Staff, U.S. Dep. Agric. Handb. 18.

Glossary

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bottom land. The normal flood plain of a stream, subject to flooding.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at

neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

- Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
- Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.
- Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.
- Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
- Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Drainage class** (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained*. These classes are defined in the “Soil Survey Manual.”
- Drainage, surface.** Runoff, or surface flow of water, from an area.
- Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
- Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.
- Fast intake** (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors which differentiate it from other stands.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure;

(3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones that have a low content of iron and manganese oxide because of chemical reduction and removal but also have a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low-residue crops. Such crops as corn that are used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent

High 4.0 to 8.0 percent

Very high more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow 0.0 to 0.01 inch

Very slow 0.01 to 0.06 inch

Slow 0.06 to 0.2 inch

Moderately slow 0.2 to 0.6 inch

Moderate 0.6 inch to 2.0 inches

Moderately rapid 2.0 to 6.0 inches

Rapid 6.0 to 20 inches

Very rapid more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay and quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is also exposed to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate weather conditions and soil moisture conditions and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. They indicate chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. They indicate the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation. Descriptive terms for concentrations and depletions are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

- Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.
- Rill.** A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.
- Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
- Sand.** As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.
- Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:
- | | |
|--------------------------|-----------------|
| Nearly level | 0 to 2 percent |
| Gently sloping | 2 to 6 percent |
| Moderately sloping | 6 to 10 percent |
- Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally

is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil.

The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Bamberg, South Carolina)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
° F	° F	° F	° F	° F	Units	In	In	In		In	
January-----	57.0	34.7	45.8	78	11	230	4.03	2.46	5.44	7	0.3
February----	61.5	36.9	49.2	81	17	280	4.07	2.29	5.64	6	1.0
March-----	70.7	44.0	57.3	88	23	536	4.18	2.20	5.92	7	.0
April-----	78.3	50.5	64.4	93	32	731	2.98	1.10	4.54	5	.0
May-----	84.5	58.7	71.6	96	41	977	3.92	1.93	5.64	6	.0
June-----	89.3	65.8	77.6	100	51	1,124	5.45	3.32	7.37	7	.0
July-----	91.5	69.5	80.5	102	59	1,253	5.25	2.87	7.34	8	.0
August-----	89.9	69.2	79.6	100	58	1,223	5.56	3.37	7.53	7	.0
September---	85.2	64.1	74.7	96	46	1,035	3.44	1.08	5.37	5	.0
October-----	76.8	52.4	64.6	91	31	761	2.63	.75	4.29	4	.0
November----	68.1	43.9	56.0	83	21	481	2.66	1.30	3.84	4	.0
December----	60.1	37.5	48.8	79	15	297	3.52	1.91	4.93	6	.1
Yearly:											
Average---	76.1	52.3	64.2	---	---	---	---	---	---	---	---
Extreme---	107	2	---	103	9	---	---	---	---	---	---
Total-----	---	---	---	---	---	8,929	47.67	40.18	54.58	72	1.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Bamberg, South Carolina)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 11	Mar. 27	Apr. 8
2 years in 10 later than--	Mar. 3	Mar. 20	Apr. 3
5 years in 10 later than--	Feb. 16	Mar. 6	Mar. 25
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 12	Nov. 3	Oct. 21
2 years in 10 earlier than--	Nov. 23	Nov. 8	Oct. 27
5 years in 10 earlier than--	Dec. 13	Nov. 19	Nov. 7

Table 3.—Growing Season

(Recorded in the period 1961-90 at Bamberg, South Carolina)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	258	232	205
8 years in 10	273	241	212
5 years in 10	301	257	226
2 years in 10	329	273	240
1 year in 10	344	281	248

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AeB	Ailey coarse sand, 2 to 6 percent slopes-----	399	0.16
AeC	Ailey coarse sand, 6 to 10 percent slopes-----	52	0.02
AlB	Alaga coarse sand, 0 to 6 percent slopes-----	6,025	2.39
AnA	Albany sand, 0 to 2 percent slopes-----	2,403	0.95
AuB	Autryville sand, 0 to 6 percent slopes-----	1,233	0.49
BaB	Barnwell loamy sand, 2 to 6 percent slopes-----	22,223	8.80
BaC	Barnwell loamy sand, 6 to 10 percent slopes-----	945	0.37
BeB2	Barnwell sandy loam, 2 to 6 percent slopes, eroded-----	239	0.09
BeC2	Barnwell sandy loam, 6 to 10 percent slopes, eroded-----	93	0.04
BnA	Blanton sand, 0 to 2 percent slopes-----	4,654	1.84
BnB	Blanton sand, 2 to 6 percent slopes-----	8,975	3.55
BnC	Blanton sand, 6 to 10 percent slopes-----	1,033	0.41
BoA	Bonneau sand, 0 to 2 percent slopes-----	14,311	5.66
BoB	Bonneau sand, 2 to 6 percent slopes-----	6,038	2.39
ByA	Byars loam, 0 to 2 percent slopes-----	3,747	1.48
CoA	Coxville fine sandy loam, 0 to 2 percent slopes-----	20,548	8.13
EcA	Echaw fine sand, 0 to 2 percent slopes-----	150	0.06
EoA	Elloree loamy sand, 0 to 2 percent slopes, frequently flooded-----	1,333	0.53
EuA	Eunola fine sandy loam, 0 to 2 percent slopes-----	2,400	0.95
FsA	Fluvaquents-Osier-Grifton complex, 0 to 2 percent slopes, frequently flooded-----	1,669	0.66
FxB	Foxworth sand, 0 to 6 percent slopes-----	1,493	0.59
GoA	Goldsboro loamy sand, 0 to 2 percent slopes-----	14,638	5.79
GsA	Grifton-Osier complex, 0 to 2 percent slopes, frequently flooded-----	12,277	4.86
HbA	Hobonny muck, 0 to 1 percent slopes, occasionally flooded-----	914	0.36
JnA	Johns fine sandy loam, 0 to 2 percent slopes-----	1,386	0.55
JsA	Johnston sandy loam, 0 to 2 percent slopes, frequently flooded	6,234	2.47
LcB	Lucy sand, 0 to 6 percent slopes-----	307	0.12
LuA	Lumbee loam, 0 to 2 percent slopes, frequently flooded-----	736	0.29
LyA	Lynchburg fine sandy loam, 0 to 2 percent slopes-----	5,718	2.26
McA	McColl loam, 0 to 2 percent slopes-----	7,149	2.83
MgA	Meggett fine sandy loam, 0 to 2 percent slopes, frequently flooded-----	5,531	2.19
NaB	Nankin loamy sand, 2 to 6 percent slopes-----	3,897	1.54
NaC	Nankin loamy sand, 6 to 10 percent slopes-----	660	0.26
NbB2	Nankin sandy loam, 2 to 6 percent slopes, eroded-----	837	0.33
NbC2	Nankin sandy loam, 6 to 10 percent slopes, eroded-----	461	0.18
NeB	Neeses loamy sand, 2 to 6 percent slopes-----	1,150	0.46
NeC	Neeses loamy sand, 6 to 10 percent slopes-----	1,452	0.57
NnB2	Neeses sandy loam, 2 to 6 percent slopes, eroded-----	306	0.12
NnC2	Neeses sandy loam, 6 to 10 percent slopes, eroded-----	536	0.21
NoA	Noboco fine sand, 0 to 2 percent slopes-----	8,842	3.50
NoB	Noboco fine sand, 2 to 6 percent slopes-----	1,087	0.43
NrA	Norfolk sand, 0 to 2 percent slopes-----	13,055	5.17
NrB	Norfolk sand, 2 to 6 percent slopes-----	2,064	0.82
OcA	Ocilla sand, 0 to 3 percent slopes-----	6,013	2.38
OgA	Ogeechee loamy sand, 0 to 2 percent slopes-----	972	0.38
OrA	Orangeburg loamy sand, 0 to 2 percent slopes-----	1,074	0.43
OrB	Orangeburg loamy sand, 2 to 6 percent slopes-----	774	0.31
OsA	Osier loamy sand, 0 to 2 percent slopes, frequently flooded---	2,404	0.95
PmA	Plummer loamy sand, 0 to 2 percent slopes-----	5,229	2.07
RaA	Rains fine sandy loam, 0 to 2 percent slopes-----	8,046	3.18
RmA	Rembert sandy loam, 0 to 2 percent slopes-----	11,973	4.74
SeA	Seagate sand, 0 to 2 percent slopes-----	480	0.91
TrB	Troup sand, 0 to 6 percent slopes-----	6,468	2.56
TrC	Troup sand, 6 to 10 percent slopes-----	923	0.37
UcB	Uchee sand, 2 to 6 percent slopes-----	8,024	3.18
UcC	Uchee sand, 6 to 10 percent slopes-----	3,361	1.33
Ud	Udorthents-----	324	0.13

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
W	Water-----	1,428	0.57
WgB	Wagram sand, 2 to 6 percent slopes-----	3,842	1.52
WhA	Wahee loamy sand, 0 to 2 percent slopes-----	2,088	0.83
	Total-----	252,619	100.00

Table 5.—Land Capability Classes and Yields per Acre of Crops

Map symbol and soil name	Land capability	Corn	Cotton lint	Soybeans	Wheat	Peanuts
		<u>Bu</u>	<u>Lbs</u>	<u>Bu</u>	<u>Bu</u>	<u>Lbs</u>
AeB----- Ailey	3S	50	400	20	---	2,300
AlB----- Alaga	3S	65	---	20	25	2,700
AnA----- Albany	3W	65	---	25	---	1,700
AuB----- Autryville	2S	75	600	25	---	3,000
BaB----- Barnwell	2E	100	600	30	50	3,700
BaC----- Barnwell	3E	90	550	25	45	3,200
BeB2----- Barnwell	2E	100	600	30	50	3,700
BeC2----- Barnwell	3E	90	550	25	45	3,200
BnA----- Blanton	3S	60	---	25	---	2,200
BnB----- Blanton	3S	60	---	25	---	2,200
BnC----- Blanton	4S	50	---	20	---	2,000
BoA----- Bonneau	2S	85	700	30	---	2,900
BoB----- Bonneau	2S	85	700	30	---	2,900
EcA----- Echaw	3S	70	---	30	---	---
EuA----- Eunola	2W	100	---	35	---	---
GoA----- Goldsboro	2W	125	700	42	60	3,600
JnA----- Johns	2W	120	650	45	50	---
LcB----- Lucy	2S	80	650	33	---	3,000
LyA----- Lynchburg	2W	115	675	45	---	---
NaB----- Nankin	2E	75	---	30	---	2,200
NaC----- Nankin	4E	50	---	20	---	1,400

Table 5.—Land Capability Classes and Yields per Acre of Crops—Continued

Map symbol and soil name	Land capability	Corn	Cotton lint	Soybeans	Wheat	Peanuts
		<u>Bu</u>	<u>Lbs</u>	<u>Bu</u>	<u>Bu</u>	<u>Lbs</u>
NbB2----- Nankin	3E	60	---	20	---	1,600
NeB----- Neeses	3E	65	500	30	---	---
NeC----- Neeses	4E	60	400	20	---	---
NnB2----- Neeses	3E	65	500	30	---	---
NnC2----- Neeses	4E	60	400	20	---	---
NoA----- Noboco	1	115	700	45	60	4,000
NoB----- Noboco	2E	110	700	40	55	3,700
NrA----- Norfolk	1	110	700	40	60	4,000
NrB----- Norfolk	2E	100	650	35	55	3,700
OcA----- Ocilla	3W	75	---	35	---	2,200
OgA----- Ogeechee	3W	100	---	45	---	---
OrA----- Orangeburg	1	120	900	45	---	4,000
OrB----- Orangeburg	2E	120	900	45	---	4,000
RaA----- Rains	3W	110	450	40	---	---
SeA----- Seagate	3W	75	---	30	---	2,400
TrB----- Troup	3S	60	500	25	---	2,200
UcB----- Uchee	2S	70	550	30	---	3,000
UcC----- Uchee	3S	65	500	25	---	2,500
WgB----- Wagram	2S	75	550	25	40	2,900
WhA----- Wahee	2W	110	---	45	---	---

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
EuA	Eunola fine sandy loam, 0 to 2 percent slopes
GoA	Goldsboro loamy sand, 0 to 2 percent slopes
JnA	Johns fine sandy loam, 0 to 2 percent slopes
LyA	Lynchburg fine sandy loam, 0 to 2 percent slopes (where drained)
NaB	Nankin loamy sand, 2 to 6 percent slopes
NoA	Noboco fine sand, 0 to 2 percent slopes
NoB	Noboco fine sand, 2 to 6 percent slopes
NrA	Norfolk sand, 0 to 2 percent slopes
NrB	Norfolk sand, 2 to 6 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes

Table 7.--Woodland Management and Productivity

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Productivity class*	
AeB----- Ailey	8S	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-----	60	4	Longleaf pine.
AeC----- Ailey	8S	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-----	60	4	Longleaf pine.
AlB----- Alaga	8S	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine----- Loblolly pine-----	70 80	6 8	Loblolly pine.
AnA----- Albany	10W	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine----- Loblolly pine-----	80 95	7 10	Loblolly pine.
AuB----- Autryville	7S	Slight	Moderate	Moderate	Slight	Moderate	Red maple----- Hickory----- Sweetgum----- White oak----- Southern red oak--- Post oak----- Longleaf pine----- Loblolly pine-----	--- --- --- --- --- 60 77	--- --- --- --- --- 4 7	Longleaf pine, loblolly pine.
BaB----- Barnwell	8S	Slight	Slight	Slight	Slight	Slight	Loblolly pine-----	85	8	Loblolly pine.
BaC----- Barnwell	8S	Slight	Slight	Slight	Slight	Slight	Loblolly pine-----	85	8	Loblolly pine.
BeB2----- Barnwell	8S	Slight	Slight	Slight	Slight	Slight	Loblolly pine-----	85	8	Loblolly pine.
BeC2----- Barnwell	8S	Slight	Slight	Slight	Slight	Slight	Loblolly pine-----	85	8	Loblolly pine.
BnA----- Blanton	11S	Slight	Moderate	Moderate	Slight	Slight	Southern red oak--- Bluejack oak----- Turkey oak----- Live oak----- Longleaf pine----- Loblolly pine-----	--- --- --- --- 70 85	--- --- --- --- 6 8	Loblolly pine, longleaf pine.
BnB----- Blanton	11S	Slight	Moderate	Moderate	Slight	Slight	Southern red oak--- Bluejack oak----- Turkey oak----- Live oak----- Longleaf pine----- Loblolly pine-----	--- --- --- --- 70 85	--- --- --- --- 6 8	Loblolly pine, longleaf pine.
BnC----- Blanton	11S	Slight	Moderate	Moderate	Slight	Slight	Southern red oak--- Bluejack oak----- Turkey oak----- Live oak----- Longleaf pine----- Loblolly pine-----	--- --- --- --- 70 85	--- --- --- --- 6 8	Loblolly pine, longleaf pine.
BoA----- Bonneau	10S	Slight	Moderate	Moderate	Slight	Slight	Hickory----- White oak----- Longleaf pine----- Loblolly pine-----	--- --- 75 95	--- --- 6 10	Loblolly pine, longleaf pine.

See footnote at end of table.

Table 7.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Productivity class*	
BoB----- Bonneau	10S	Slight	Moderate	Moderate	Slight	Slight	Hickory----- White oak----- Longleaf pine----- Loblolly pine-----	--- --- 75 95	--- --- 6 10	Loblolly pine, longleaf pine.
ByA----- Byars	10W	Slight	Severe	Severe	Severe	Severe	Cypress----- Water tupelo----- Blackgum----- Water oak----- Sweetgum-----	--- 90 --- 90 90	--- 10 --- 6 7	Sweetgum.
CoA----- Coxville	9W	Slight	Moderate	Moderate	Severe	Severe	Yellow-poplar----- Longleaf pine----- Southern red oak--- Water oak----- Willow oak----- Sweetgum----- Loblolly pine-----	86 77 87 75 88 84 91	6 7 5 5 6 6 9	Loblolly pine, sweetgum.
EcA----- Echaw	5S	Slight	Severe	Moderate	Slight	Slight	Bluejack oak----- Turkey oak----- Post oak----- Longleaf pine----- Loblolly pine-----	--- --- --- 68 85	--- --- --- 5 8	Loblolly pine, longleaf pine.
EoA----- Elloree	9W	Slight	Severe	Severe	Severe	Severe	Red maple----- Water oak----- Sweetgum----- Yellow-poplar----- Loblolly pine-----	--- --- --- --- 90	--- --- --- --- 9	Sweetgum, yellow-poplar, loblolly pine.
EuA----- Eunola	10W	Slight	Moderate	Slight	Slight	Moderate	Sweetgum----- Yellow-poplar----- Loblolly pine-----	95 95 95	8 7 10	Loblolly pine, yellow-poplar, sweetgum.
FsA: Fluvaquents---	7W	Slight	Severe	Severe	Moderate	Severe	Water tupelo----- Blackgum----- Water oak----- Elm----- Sweetgum----- Loblolly pine-----	--- --- --- --- 90 90	--- --- --- --- 7 9	Loblolly pine, sweetgum, yellow-poplar, American sycamore, eastern cottonwood, cherrybark oak.
Osier-----	11W	Slight	Severe	Severe	Slight	Severe	Longleaf pine----- Loblolly pine-----	69 87	5 9	Loblolly pine.
Grifton-----	8W	Slight	Moderate	Severe	Slight	Severe	Red maple----- Yellow-poplar----- Water tupelo----- American sycamore-- Willow oak----- Baldcypress----- Sweetgum-----	--- 108 --- --- --- --- ---	--- 8 --- --- --- --- ---	Loblolly pine, sweetgum.

See footnote at end of table.

Table 7.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Productivity class*	
FxB----- Foxworth	10S	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	65	5	Longleaf pine.
							Bluejack oak-----	---	---	
							Turkey oak-----	---	---	
							Laurel oak-----	---	---	
							Post oak-----	---	---	
							Live oak-----	---	---	
GoA----- Goldsboro	9A	Slight	Slight	Slight	Slight	Moderate	Red maple-----	---	---	Loblolly pine.
							Sweetgum-----	---	---	
							Yellow-poplar-----	---	---	
							Longleaf pine-----	73	6	
							White oak-----	---	---	
							Southern red oak---	---	---	
							Water oak-----	---	---	
GsA: Grifton-----	8W	Slight	Moderate	Severe	Slight	Severe	Loblolly pine-----	90	9	Loblolly pine, sweetgum.
							Red maple-----	---	---	
							Yellow-poplar-----	108	8	
							Water tupelo-----	---	---	
							American sycamore--	---	---	
							Willow oak-----	---	---	
Osier-----	11W	Slight	Severe	Severe	Slight	Severe	Baldcypress-----	---	---	Loblolly pine.
							Sweetgum-----	---	---	
							Longleaf pine-----	69	5	
HbA----- Hobonny	2W	Slight	Severe	Severe			Loblolly pine-----	87	9	Loblolly pine.
							Pond pine-----	55	2	
							Water tupelo-----	---	---	
JnA----- Johns	9A	Slight	Slight	Slight	Slight	Moderate	Baldcypress-----	---	---	Loblolly pine.
							Water tupelo-----	---	---	
							Willow oak-----	---	---	
							Loblolly pine-----	88	9	
							American sycamore--	---	---	
JsA----- Johnston	7W	Slight	Severe	Severe	Severe	Severe	Water oak-----	103	7	Sweetgum, baldcypress, green ash.
							Yellow-poplar-----	94	7	
							Water tupelo-----	---	---	
							Swamp tupelo-----	---	---	
							Sweetgum-----	94	8	
							Loblolly pine-----	106	12	
LcB----- Lucy	8S	Slight	Moderate	Moderate	Slight	Moderate	Baldcypress-----	---	---	Loblolly pine.
							Longleaf pine-----	70	6	
LuA----- Lumbee	10W	Slight	Moderate	Moderate	Moderate	Severe	Loblolly pine-----	80	8	Loblolly pine, sweetgum.
							Red maple-----	---	---	
							Water tupelo-----	---	---	
							Pond pine-----	---	---	
							White oak-----	---	---	
							Water oak-----	---	---	
							Willow oak-----	---	---	
							Sweetgum-----	---	---	
							Loblolly pine-----	94	10	

See footnote at end of table.

Table 7.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Productivity class*	
LyA----- Lynchburg	9W	Slight	Moderate	Slight	Slight	Severe	Yellow-poplar-----	92	6	Loblolly pine, sweetgum, American sycamore.
							Blackgum-----	---	---	
							Longleaf pine-----	74	6	
							White oak-----	---	---	
							Southern red oak---	---	---	
							Sweetgum-----	90	7	
McA----- McColl	8W	Slight	Severe	Severe	Severe	Severe	Loblolly pine-----	86	9	
							Sweetgum-----	92	8	
							Water tupelo-----	---	---	
MgA----- Meggett	10W	Slight	Severe	Severe	Slight	Severe	Baldcypress-----	---	---	Water tupelo, baldcypress.
							Water tupelo-----	---	---	
							Pond pine-----	75	4	
							Baldcypress-----	---	---	
NaB----- Nankin	8A	Slight	Slight	Slight	Slight	Moderate	Sweetgum-----	100	10	Water oak.
							Water oak-----	---	---	
NaC----- Nankin	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	70	6	Loblolly pine.
							Loblolly pine-----	80	8	
NbB2----- Nankin	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	70	6	Loblolly pine.
							Loblolly pine-----	80	8	
NbC2----- Nankin	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	70	6	Loblolly pine.
							Loblolly pine-----	80	8	
NeB----- Neeses	7A	Moderate	Slight	Slight	Moderate	Slight	Longleaf pine-----	65	5	Loblolly pine.
							Loblolly pine-----	75	7	
NeC----- Neeses	7A	Moderate	Slight	Slight	Moderate	Slight	Longleaf pine-----	65	5	Loblolly pine.
							Loblolly pine-----	75	7	
NnB2----- Neeses	7A	Moderate	Slight	Slight	Moderate	Slight	Longleaf pine-----	65	5	Loblolly pine.
							Loblolly pine-----	75	7	
NnC2----- Neeses	7A	Moderate	Slight	Slight	Moderate	Slight	Longleaf pine-----	65	5	Loblolly pine.
							Loblolly pine-----	75	7	
NoA----- Noboco	9A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	80	7	Loblolly pine.
							Southern red oak---	---	---	
							Sweetgum-----	---	---	
							Loblolly pine-----	90	9	
NoB----- Noboco	9A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	80	7	Loblolly pine.
							Southern red oak---	---	---	
							Sweetgum-----	---	---	
							Loblolly pine-----	90	9	
NrA----- Norfolk	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	77	7	Loblolly pine.
							White oak-----	---	---	
							Southern red oak---	---	---	
							Loblolly pine-----	84	8	

See footnote at end of table.

Table 7.--Woodland Management and Productivity--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Productivity class*	
NrB----- Norfolk	8A	Slight	Slight	Slight	Slight	Moderate	Hickory-----	---	---	Loblolly pine.
							Yellow-poplar-----	---	---	
							Blackgum-----	---	---	
							Longleaf pine-----	77	7	
							White oak-----	---	---	
							Southern red oak---	---	---	
OcA----- Ocilla	8W	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	77	7	Loblolly pine.
							Loblolly pine-----	85	8	
OgA----- Ogeechee	9W	Slight	Severe	Moderate	Slight	Moderate	Pond pine-----	70	4	Loblolly pine, sweetgum.
							Loblolly pine-----	90	9	
OrA----- Orangeburg	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	77	7	Loblolly pine.
							Loblolly pine-----	80	8	
OrB----- Orangeburg	8A	Slight	Slight	Slight	Slight	Moderate	Longleaf pine-----	77	7	Loblolly pine.
							Loblolly pine-----	80	8	
OsA----- Osier	11W	Slight	Severe	Severe	Slight	Severe	Longleaf pine-----	69	5	Loblolly pine.
							Loblolly pine-----	87	9	
PmA----- Plummer	11W	Slight	Severe	Severe	Slight	Moderate	Longleaf pine-----	70	6	Loblolly pine.
							Loblolly pine-----	91	9	
RaA----- Rains	10W	Slight	Moderate	Moderate	Severe	Severe	Sweetgum-----	90	7	Loblolly pine, sweetgum, American sycamore.
							Loblolly pine-----	94	10	
RmA----- Rembert	7W	Slight	Severe	Severe	Severe	Severe	Sweetgum-----	90	7	Water tupelo, baldcypress, eastern cottonwood.
							Water tupelo-----	---	---	
							Baldcypress-----	---	---	
SeA----- Seagate	10W	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	70	6	Loblolly pine.
							Loblolly pine-----	80	8	
TrB----- Troup	8S	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	70	6	Longleaf pine, loblolly pine.
							Loblolly pine-----	80	8	
TrC----- Troup	8S	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	70	6	Longleaf pine, loblolly pine.
							Loblolly pine-----	80	8	
UcB----- Uchee	8S	Slight	Moderate	Moderate	Slight	Moderate	Shortleaf pine-----	---	---	Longleaf pine, loblolly pine.
							Longleaf pine-----	67	5	
							Loblolly pine-----	80	8	
UcC----- Uchee	8S	Slight	Moderate	Moderate	Slight	Moderate	Shortleaf pine-----	---	---	Longleaf pine, loblolly pine.
							Longleaf pine-----	67	5	
							Loblolly pine-----	80	8	
Ud----- Udorthents	5C	Moderate	Moderate	Moderate	Slight	Moderate	Loblolly pine-----	50	5	Loblolly pine.
WgB----- Wagram	8S	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine-----	72	6	Longleaf pine, loblolly pine.
							Loblolly pine-----	81	8	

See footnote at end of table.

Table 7.—Woodland Management and Productivity—Continued

Soil name and map symbol	Ordi- nation symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Produc- tivity class*	
WhA----- Wahee	9W	Slight	Moderate	Moderate	Slight	Severe	Blackgum-----	---	---	Loblolly pine, sweetgum, water oak, American sycamore.
							Southern red oak---	---	---	
							Swamp chestnut oak	---	---	
							Willow oak-----	---	---	
							Sweetgum-----	90	7	
							Loblolly pine-----	86	9	
							Water oak-----	---	---	

* Productivity is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

Table 8.--Recreational Development

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails
AeB----- Ailey	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
AeC----- Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
AlB----- Alaga	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
AnA----- Albany	Severe: wetness, too sandy.	Severe: too sandy.	Severe: too sandy, wetness.	Severe: too sandy.
AuB----- Autryville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
BaB----- Barnwell	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones.	Slight.
BaC----- Barnwell	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight.
BeB2----- Barnwell	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones.	Slight.
BeC2----- Barnwell	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight.
BnA----- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
BnB----- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
BnC----- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
BoA----- Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
BoB----- Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
ByA----- Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
CoA----- Coxville	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness, too acid.	Severe: wetness.
EcA----- Echaw	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails
EoA----- Ellore	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.
EuA----- Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FsA: Fluvaquents-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Osier-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Grifton-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
FxB----- Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
GoA----- Goldsboro	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight.
GsA: Grifton-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Osier-----	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.
HbA----- Hobonny	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus, too acid.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.
JnA----- Johns	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
JsA----- Johnston	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.
LcB----- Lucy	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
LuA----- Lumbee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
LyA----- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
McA----- McColl	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails
MgA----- Meggett	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
NaB----- Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight.
NaC----- Nankin	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight.
NbB2----- Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight.
NbC2----- Nankin	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight.
NeB----- Neeses	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight.
NeC----- Neeses	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight.
NnB2----- Neeses	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight.
NnC2----- Neeses	Severe: too acid.	Severe: too acid.	Severe: slope, too acid.	Slight.
NoA----- Noboco	Slight-----	Slight-----	Slight-----	Slight.
NoB----- Noboco	Slight-----	Slight-----	Moderate: slope.	Slight.
NrA----- Norfolk	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight.
NrB----- Norfolk	Severe: too acid.	Severe: too acid.	Severe: too acid.	Slight.
OcA----- Ocilla	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
OgA----- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA----- Orangeburg	Slight-----	Slight-----	Slight-----	Slight.
OrB----- Orangeburg	Slight-----	Slight-----	Moderate: slope.	Slight.
OsA----- Osier	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails
PmA----- Plummer	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RaA----- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RmA----- Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
SeA----- Seagate	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: too sandy, too acid.	Severe: too sandy.
TrB----- Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
TrC----- Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
UcB----- Uchee	Severe: too sandy.	Severe: too sandy.	Moderate: slope, small stones.	Severe: too sandy.
UcC----- Uchee	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
Ud----- Udorthents	Variable-----	Variable-----	Variable-----	Variable.
WgB----- Wagram	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
WhA----- Wahee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

Table 9.--Wildlife Habitat

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
AeB----- Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC----- Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AlB----- Alaga	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AnA----- Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
AuB----- Autryville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BaB----- Barnwell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
BaC----- Barnwell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
BeB2----- Barnwell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
BeC2----- Barnwell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
BnA----- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BnB----- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BnC----- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoA----- Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
BoB----- Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
ByA----- Byars	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
CoA----- Coxville	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
EcA----- Echaw	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
EoA----- Elloree	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
EuA----- Eunola	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
FsA:										
Fluvaquents----	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Very poor.	Fair	Good.
Osier-----	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
Grifton-----	Very poor.	Very poor.	Poor	Fair	Poor	Good	Fair	Very poor.	Fair	Fair.
FxB----- Foxworth	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
GoA----- Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
GsA:										
Grifton-----	Very poor.	Very poor.	Poor	Fair	Poor	Good	Fair	Very poor.	Fair	Fair.
Osier-----	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
HbA----- Hobonny	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
JnA----- Johns	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
JsA----- Johnston	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
LcB----- Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
LuA----- Lumbee	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
LyA----- Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
McA----- McColl	Very poor.	Poor	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
MgA----- Meggett	Very poor.	Very poor.	Very poor.	Fair	Fair	Good	Good	Very poor.	Poor	Good.
NaB----- Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NaC----- Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NbB2----- Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NbC2----- Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
NeB----- Neeses	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
NeC----- Neeses	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
NnB2----- Neeses	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
NnC2----- Neeses	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
NoA----- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NoB----- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NrA----- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NrB----- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcA----- Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
OgA----- Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
OrA----- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OrB----- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OsA----- Osier	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
PmA----- Plummer	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
RaA----- Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
RmA----- Rembert	Very poor.	Poor	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
SeA----- Seagate	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Poor	Poor	Poor.
TrB----- Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
TrC----- Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UcB----- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
UcC----- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ud----- Udorthents	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
WgB----- Wagram	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WhA----- Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

Table 10.—Building Site Development

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns, landscaping, and golf fairways
AeB----- Ailey	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: too sandy.
AeC----- Ailey	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: too sandy.
AlB----- Alaga	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Moderate: droughty, too sandy.
AnA----- Albany	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
AuB----- Autryville	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Moderate: droughty, too sandy.
BaB----- Barnwell	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
BaC----- Barnwell	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
BeB2----- Barnwell	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
BeC2----- Barnwell	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
BnA----- Blanton	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Severe: droughty.
BnB----- Blanton	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Moderate: slope.	Slight-----	Severe: droughty.
BnC----- Blanton	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
BoA----- Bonneau	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Moderate: droughty, too sandy.
BoB----- Bonneau	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Moderate: slope.	Slight-----	Moderate: droughty, too sandy.
ByA----- Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
CoA----- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: too acid, wetness.
EcA----- Echaw	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Severe: droughty.

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns, landscaping, and golf fairways
EoA----- Elloree	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
EuA----- Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FsA: Fluvaquents---	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: flooding.
Osier-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty, flooding.
Grifton-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
FxB----- Foxworth	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Slight-----	Moderate: droughty, too sandy.
GoA----- Goldboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
GsA: Grifton-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Osier-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty, flooding.
HbA----- Hobonny	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, flooding, ponding.	Severe: too acid, ponding, flooding.
JnA----- Johns	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Moderate: wetness, droughty.
JsA----- Johnston	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding, low strength.	Severe: ponding, flooding.	Severe: ponding, flooding.
LcB----- Lucy	Moderate: cutbanks cave.	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: droughty, too sandy.
LuA----- Lumbee	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.

[illegible]

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns, landscaping, and golf fairways
OrA----- Orangeburg	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight.
OrB----- Orangeburg	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
OsA----- Osier	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty, flooding.
PmA----- Plummer	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
RaA----- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RmA----- Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
SeA----- Seagate	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: too acid, droughty.
TrB----- Troup	Severe: cutbanks cave.	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: droughty.
TrC----- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
UcB----- Uchee	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Moderate: slope.	Slight-----	Moderate: droughty.
UcC----- Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Ud----- Udorthents	Variable-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Variable.
WgB----- Wagram	Severe: cutbanks cave.	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: droughty, too sandy.
WhA----- Wahee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.

Table 11.--Sanitary Facilities

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AeB----- Ailey	Severe: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
AeC----- Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
AlB----- Alaga	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AnA----- Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
AuB----- Autryville	Moderate: wetness.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BaB----- Barnwell	Severe: wetness, percs slowly.	Moderate: seepage, slope, wetness.	Moderate: wetness, too clayey.	Slight-----	Poor: thin layer.
BaC----- Barnwell	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope, too clayey.	Moderate: slope.	Poor: thin layer.
BeB2----- Barnwell	Severe: wetness, percs slowly.	Moderate: seepage, slope, wetness.	Moderate: wetness, too clayey.	Slight-----	Poor: thin layer.
BeC2----- Barnwell	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope, too clayey.	Moderate: slope.	Poor: thin layer.
BnA----- Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BnB----- Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BnC----- Blanton	Moderate: wetness, slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoA----- Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
BoB----- Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
ByA----- Byars	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CoA----- Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too acid.	Severe: wetness.	Poor: wetness, too acid.
EcA----- Echaw	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
EoA----- Elloree	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: wetness.
EuA----- Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness, thin layer.
FsA: Fluvaquents---	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Osier-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Grifton-----	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: seepage, wetness.
FxB----- Foxworth	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
GoA----- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness, too acid.	Severe: wetness.	Fair: wetness.
GsA: Grifton-----	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness.
Osier-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
HbA----- Hobonny	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, excess humus, ponding.

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
JnA----- Johns	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
JsA----- Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding.
LcB----- Lucy	Slight-----	Severe: seepage.	Slight-----	Severe: seepage.	Fair: too clayey.
LuA----- Lumbee	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
LyA----- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, wetness.
McA----- McColl	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
MgA----- Meggett	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness, seepage.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness.
NaB----- Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
NaC----- Nankin	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
NbB2----- Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
NbC2----- Nankin	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
NeB----- Neeses	Severe: percs slowly.	Moderate: seepage, slope.	Severe: too acid.	Slight-----	Poor: too acid.
NeC----- Neeses	Severe: percs slowly.	Severe: slope.	Severe: too acid.	Moderate: slope.	Poor: too acid.
NnB2----- Neeses	Severe: percs slowly.	Moderate: seepage, slope.	Severe: too acid.	Slight-----	Poor: too acid.
NnC2----- Neeses	Severe: percs slowly.	Severe: slope.	Severe: too acid.	Moderate: slope.	Poor: too acid.

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
NoA----- Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NoB----- Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NrA----- Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness, too acid.	Moderate: wetness.	Poor: too acid.
NrB----- Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness, too acid.	Moderate: wetness.	Poor: too acid.
OcA----- Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
OgA----- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
OrA----- Orangeburg	Slight-----	Moderate: seepage.	Slight-----	Slight-----	Good.
OrB----- Orangeburg	Slight-----	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
OsA----- Osier	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
PmA----- Plummer	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
RaA----- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
RmA----- Rembert	Severe: ponding, percs slowly.	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
SeA----- Seagate	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too acid.	Severe: seepage, wetness.	Poor: too acid.
TrB----- Troup	Slight-----	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrC----- Troup	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
UcB----- Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.

Table 11.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
UcC----- Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
Ud----- Udorthents	Variable-----	Variable-----	Variable-----	Slight-----	Variable.
WgB----- Wagram	Moderate: percs slowly.	Severe: seepage.	Slight-----	Severe: seepage.	Good.
WhA----- Wahee	Severe: wetness, percs slowly.	Slight-----	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.

Table 12.—Construction Materials

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
AeB----- Ailey	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AeC----- Ailey	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AlB----- Alaga	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
AnA----- Albany	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy.
AuB----- Autryville	Good-----	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
BaB----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BaC----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BeB2----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BeC2----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BnA----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BnB----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BnC----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BoA----- Bonneau	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
BoB----- Bonneau	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
ByA----- Byars	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
CoA----- Coxville	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
EcA----- Echaw	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy.

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
AeB----- Ailey	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AeC----- Ailey	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AlB----- Alaga	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
AnA----- Albany	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy.
AuB----- Autryville	Good-----	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
BaB----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BaC----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BeB2----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BeC2----- Barnwell	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, area reclaim.
BnA----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BnB----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BnC----- Blanton	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
BoA----- Bonneau	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
BoB----- Bonneau	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
ByA----- Byars	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
CoA----- Coxville	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness, too acid.
EcA----- Echaw	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy.

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
EOA----- Elloree	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
EuA----- Eunola	Fair: wetness.	Probable-----	Improbable: too sandy.	Fair: too clayey, small stones, thin layer.
FsA: Fluvaquents-----	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Osier-----	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy, wetness.
Grifton-----	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
FxB----- Foxworth	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
GoA----- Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too acid.
GsA: Grifton-----	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Osier-----	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy, wetness.
HbA----- Hobonny	Poor: low strength, wetness.	Probable-----	Improbable: too sandy.	Poor: excess humus, wetness, too acid.
JnA----- Johns	Fair: wetness.	Probable-----	Improbable: too sandy.	Fair: thin layer.
JsA----- Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
LcB----- Lucy	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
LuA----- Lumbee	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: wetness.
LyA----- Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
McA----- McColl	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, wetness, too clayey.

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
MgA----- Meggett	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
NaB----- Nankin	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NaC----- Nankin	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NbB2----- Nankin	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NbC2----- Nankin	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NeB----- Neeses	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
NeC----- Neeses	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
NnB2----- Neeses	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
NnC2----- Neeses	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, too acid.
NoA----- Noboco	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
NoB----- Noboco	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
NrA----- Norfolk	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
NrB----- Norfolk	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
OcA----- Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
OgA----- Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
OrA----- Orangeburg	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
OrB----- Orangeburg	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
OsA----- Osier	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy, wetness.

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
PmA----- Plummer	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: wetness.
RaA----- Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
RmA----- Rembert	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
SeA----- Seagate	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, too acid.
TrB----- Troup	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
TrC----- Troup	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
UcB----- Uchee	Good-----	Improbable: thin layer.	Improbable: excess fines.	Poor: too sandy.
UcC----- Uchee	Good-----	Improbable: thin layer.	Improbable: excess fines.	Poor: too sandy.
Ud----- Udorthents	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Variable.
WgB----- Wagram	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
WhA----- Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

Table 13.--Water Management

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AeB----- Ailey	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water	Droughty percs slowly, slope.	Too sandy, percs slowly.	Droughty, rooting depth.
AeC----- Ailey	Severe: slope.	Slight-----	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Slope, too sandy, percs slowly.	Slope, droughty, rooting depth.
AlB----- Alaga	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty, rooting depth.
AnA----- Albany	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Slow refill, cutbanks cave.	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
AuB----- Autryville	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BaB----- Barnwell	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, droughty, percs slowly.	Soil blowing---	Droughty.
BaC----- Barnwell	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, droughty, percs slowly.	Slope, soil blowing.	Slope, droughty.
BeB2----- Barnwell	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, percs slowly.	Soil blowing---	Favorable.
BeC2----- Barnwell	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, percs slowly.	Slope, soil blowing.	Slope.
BnA----- Blanton	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BnB----- Blanton	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BnC----- Blanton	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
BoA----- Bonneau	Severe: seepage.	Severe: thin layer.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake.	Soil blowing---	Droughty.
BoB----- Bonneau	Severe: seepage.	Severe: thin layer.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Soil blowing---	Droughty.
ByA----- Byars	Slight-----	Severe: hard to pack, ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, soil blowing, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
CoA----- Coxville	Slight-----	Severe: wetness.	Severe: slow refill.	Too acid-----	Wetness, soil blowing, too acid.	Wetness, soil blowing.	Wetness.
EcA----- Echaw	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Droughty, fast intake.	Wetness, too sandy, soil blowing.	Droughty.
EoA----- Ellore	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding-----	Wetness, droughty, fast intake.	Wetness-----	Wetness, droughty.
EuA----- Eunola	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable-----	Wetness-----	Wetness, soil blowing.	Favorable.
FsA: Fluvaquents----	Moderate: seepage.	Severe: piping, wetness.	Moderate: cutbanks cave.	Flooding-----	Flooding wetness.	Wetness, flooding.	Wetness, flooding.
Osier-----	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, too sandy.	Wetness, droughty.
Grifton-----	Severe: seepage.	Severe: wetness.	Severe: cutbanks cave.	Flooding-----	Wetness, fast intake, soil blowing.	Wetness, soil blowing.	Wetness.
FxB----- Foxworth	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
GoA----- Goldsboro	Moderate: seepage.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Too acid-----	Wetness, soil blowing.	Wetness, soil blowing.	Favorable.

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
GsA:							
Grifton-----	Severe: seepage.	Severe: wetness.	Severe: cutbanks cave.	Flooding-----	Wetness, soil blowing.	Wetness, soil blowing.	Wetness.
Osier-----	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, too sandy.	Wetness, droughty.
HbA----- Hobonny	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, subsides.	Ponding, flooding.	Ponding, too sandy, soil blowing.	Wetness.
JnA----- Johns	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, soil blowing.	Wetness, too sandy, soil blowing.	Droughty.
JsA----- Johnston	Severe: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding, flooding.	Ponding, flooding.	Ponding-----	Wetness.
LcB----- Lucy	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Too sandy, soil blowing.	Droughty.
LuA----- Lumbee	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, fast intake, soil blowing.	Wetness-----	Wetness.
LyA----- Lynchburg	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable-----	Wetness, soil blowing.	Wetness, soil blowing.	Wetness.
McA----- McColl	Moderate: seepage.	Severe: piping, ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, droughty, soil blowing.	Ponding, rooting depth, soil blowing.	Wetness, droughty, rooting depth.
MgA----- Meggett	Moderate: seepage.	Severe: wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.	Wetness, percs slowly.
NaB----- Nankin	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Soil blowing---	Favorable.

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
NaC----- Nankin	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Slope, soil blowing.	Slope.
NbB2----- Nankin	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Slope-----	Soil blowing---	Favorable.
NbC2----- Nankin	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water	Slope-----	Slope, soil blowing.	Slope.
NeB----- Neeses	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Soil blowing, percs slowly.	Droughty, rooting depth.
NeC----- Neeses	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Slope, soil blowing, percs slowly.	Slope, droughty, rooting depth.
NnB2----- Neeses	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Droughty-----	Soil blowing, percs slowly.	Droughty, rooting depth.
NnC2----- Neeses	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Droughty-----	Slope, soil blowing, percs slowly.	Slope, droughty, rooting depth.
NoA----- Noboco	Moderate: seepage.	Severe: piping.	Severe: cutbanks cave.	Favorable-----	Wetness, fast intake.	Wetness-----	Rooting depth.
NoB----- Noboco	Moderate: seepage, slope.	Severe: piping.	Severe: cutbanks cave.	Slope-----	Slope, wetness, fast intake.	Wetness-----	Rooting depth.
NrA----- Norfolk	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Fast intake, soil blowing.	Soil blowing---	Favorable.
NrB----- Norfolk	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope, fast intake.	Soil blowing---	Favorable.
OcA----- Ocilla	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable-----	Wetness, droughty, fast intake.	Wetness, soil blowing.	Droughty.
OgA----- Ogeechee	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Favorable-----	Wetness, fast intake.	Wetness-----	Wetness.

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
OrA----- Orangeburg	Moderate: seepage.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake----	Soil blowing---	Favorable.
OrB----- Orangeburg	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Soil blowing---	Favorable.
OsA----- Osier	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.	Wetness, too sandy.	Wetness, droughty.
PmA----- Plummer	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
RaA----- Rains	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable-----	Wetness-----	Wetness, soil blowing.	Wetness.
RmA----- Rembert	Moderate: seepage.	Severe: ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, soil blowing, percs slowly.	Ponding, soil blowing.	Wetness, percs slowly.
SeA----- Seagate	Severe: seepage.	Severe: wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, soil blowing.	Droughty.
TrB----- Troup	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Too sandy, soil blowing.	Droughty.
TrC----- Troup	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy, soil blowing.	Slope, droughty.
UcB----- Uchee	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy-----	Droughty.
UcC----- Uchee	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy.	Slope, droughty.
Ud----- Udorthents	Variable-----	Slight-----	Severe: no water.	Deep to water	Variable-----	Variable-----	Variable.

Table 13.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
WgB----- Wagram	Severe: seepage.	Slight-----	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Soil blowing---	Droughty, rooting depth.
WhA----- Wahee	Slight-----	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly	Wetness, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.

Table 14.—Engineering Index Properties (Part I)

Map symbol and soil name	Depth	USDA texture	Classification	
			Unified	AASHTO
	<u>In</u>			
AeB-----	0-31	COS	SP-SM	A-2, A-3
Ailey	31-47	COSL, SCL	SM, SC, SC-SM	A-2, A-4, A-6
	47-75	SL, SCL, SC	SM, SC, SC-SM	A-2, A-4, A-6
	75-80	COSL, SL, SCL, SC	SM, SC, SC-SM	A-2, A-4, A-6
AeC-----	0-24	COS	SP-SM	A-2, A-3
Ailey	24-36	COSL, SCL	SM, SC, SC-SM	A-2, A-4, A-6
	36-50	SL, SCL, SC	SM, SC, SC-SM	A-2, A-4, A-6
	50-72	COSL, SL, SCL, SC	SM, SC, SC-SM	A-2, A-4, A-6
AlB-----	0-5	COS	SM, SP-SM	A-2, A-1-b, A-3
Alaga	5-80	LS, LFS, FS, COS	SM, SW-SM, SP-SM	A-2
AnA-----	0-44	S	SM, SP-SM	A-2
Albany	44-80	SCL, SL, FSL	SC, SM, SC-SM	A-2, A-4, A-6
AuB-----	0-24	S	SP-SM, SM	A-2, A-3
Autryville	24-42	SL, SCL, FSL	SM	A-2
	42-63	S, LS, LFS	SP-SM, SM	A-2, A-3
	63-80	SL, SCL, FSL	SM, SC, SC-SM	A-2, A-4
BaB-----	0-8	LS	SM, SC-SM	A-2, A-1, A-4
Barnwell	8-45	SCL, SL, CL	SC, CL	A-2, A-4, A-6, A-7
	45-53	SCL, SC, CL	SC, CL, CH	A-2, A-4, A-6, A-7
	53-75	SR, C, LS, SCL, SL	SM, SC, ML, CL	A-1, A-2, A-4, A-6
BaC-----	0-8	LS	SM, SC-SM	A-2, A-1, A-4
Barnwell	8-45	SCL, SL, CL	SC, CL	A-2, A-4, A-6, A-7
	45-53	SCL, SC, CL	SC, CL, CH	A-2, A-4, A-6, A-7
	53-75	SR, C, LS	SM, SC, ML, CL	A-1, A-2, A-4, A-6
BeB2-----	0-8	SL	SC, SM, ML	A-2, A-4, A-6
Barnwell	8-45	SCL, SL, CL	SC, CL	A-2, A-4, A-6, A-7
	45-53	SCL, SC, CL	SC, CL, CH	A-2, A-4, A-6, A-7
	53-75	SR, C, LS	SM, SC, ML, CL	A-1, A-2, A-4, A-6
BeC2-----	0-8	SL	SC, SM, ML	A-2, A-4, A-6
Barnwell	8-45	SCL, SL, CL	SC, CL	A-2, A-4, A-6, A-7
	45-53	SCL, SC, CL	SC, CL, CH	A-2, A-4, A-6, A-7
	53-75	SR, C, LS	SM, SC, ML, CL	A-1, A-2, A-4, A-6
BnA-----	0-44	S, COS	SP-SM, SM	A-3, A-2-4
Blanton	44-80	SCL, SL, SC	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6
BnB-----	0-44	S, COS	SP-SM, SM	A-3, A-2-4
Blanton	44-80	SCL, SL, SC	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6
BnC-----	0-44	S, COS	SP-SM, SM	A-3, A-2-4
Blanton	44-80	SCL, SL, SC	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6
BoA-----	0-26	S	SM, SP-SM	A-2, A-3
Bonneau	26-41	SL, SCL, FSL	SC, SC-SM	A-2, A-6, A-4
	41-80	SL, SCL, SC	CL, SC, SC-SM, CL-ML	A-4, A-6, A-2
BoB-----	0-26	S	SM, SP-SM	A-2, A-3
Bonneau	26-47	SL, SCL, FSL	SC, SC-SM	A-2, A-6, A-4
	47-80	SL, SCL, SC	CL, SC, SC-SM, CL-ML	A-4, A-6, A-2
ByA-----	0-12	FSL	SM, ML	A-4
Byars	12-52	C, CL, SC	CL, CH	A-7-5, A-7-6, A-6
	52-80	C, SICL, SIC	CL	A-6, A-7, A-4

Table 14.—Engineering Index Properties (Part I)—Continued

Map symbol and soil name	Depth	USDA texture	Classification	
			Unified	AASHTO
	<u>In</u>			
CoA-----	0-5	FSL	SM, ML, CL-ML, CL	A-4, A-6, A-7
Coxville	5-62	CL, SC, C	CL, CH	A-6, A-7
	62-80	Variable	---	---
EcA-----	0-5	FS	SP, SP-SM	A-3, A-2-4
Echaw	5-33	LS, FS, S	SM, SP-SM	A-2, A-3
	33-58	FS, LS, S	SM, SP-SM	A-2, A-3
	58-80	LS, FS, S	SM, SP-SM	A-2, A-3
EoA-----	0-6	S	SM, SP-SM	A-2
Elloree	6-23	S, FS, LS	SP-SM, SM	A-2, A-3
	23-42	SL, SCL, FSL	SM, SC-SM, SC	A-2
	42-69	LS, SL, SCL	SM, SC-SM, SC	A-2, A-4, A-6
	69-80	Variable	---	---
EuA-----	0-9	FSL	SM	A-2, A-4
Eunola	9-22	SCL, CL, FSL	SM, SC, SC-SM, CL	A-4, A-2, A-6
	22-55	SL, SCL	SM, SC, SC-SM	A-2, A-4
	55-80	S, LS, FS	SM, SP-SM	A-2, A-3
FsA:				
Fluvaquents-----	0-38	LS	SP-SM	A-2, A-3
	38-68	S, LS	SM, SP-SM	A-2, A-3
	68-80	SL	SM	A-2, A-4
Osier-----	0-3	LS	SP-SM	A-2, A-3
	3-42	S, LS, LFS	SP-SM, SM	A-2, A-3
	42-80	COS, S, FS	SP, SP-SM	A-1, A-3, A-2-4
Grifton-----	0-7	LS	SM, SP-SM	A-2
	7-56	SL, SCL, CL	SC, CL, CL-ML, SC-SM	A-4, A-6, A-2
	56-80	Variable	---	---
FxB-----	0-6	S	SP-SM	A-3, A-2-4
Foxworth	6-42	S, FS	SP-SM	A-3, A-2-4
	42-80	S, FS	SP, SP-SM	A-3, A-2-4
GoA-----	0-5	SL	SM, SC-SM, SC	A-2, A-4, A-6
Goldsboro	5-13	SCL, SL	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6
	13-80	SCL, CL, SC	SC, CL, CL-ML, CH	A-4, A-6, A-7-6
GsA:				
Grifton-----	0-7	FSL	SM	A-2, A-4
	7-56	SL, SCL, CL	SC, CL, CL-ML, SC-SM	A-4, A-6, A-2
	56-80	Variable	---	---
Osier-----	0-3	S	SP-SM	A-2, A-3
	3-42	S, LS, LFS	SP-SM, SM	A-2, A-3
	42-80	COS, S, FS	SP, SP-SM	A-1, A-3, A-2-4
HbA-----	0-65	Muck	PT	
Hobonny	65-80	LS, S, LFS	SM, SP-SM	A-2, A-3
JnA-----	0-9	FSL	SM, SC, SC-SM	A-2, A-4
Johns	9-27	SCL, SL, CL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6, A-7
	27-80	S, LS, COS	SM, SP-SM, SP	A-2, A-3
JsA-----	0-26	MK-L	OL, ML, CL-ML	A-4, A-5, A-7-5, A-6
Johnston	26-36	SR, LS, S	SM, SP-SM	A-2, A-3
	36-72	SR, FSL, SL	SM	A-2, A-4

Table 14.—Engineering Index Properties (Part I)—Continued

Map symbol and soil name	Depth	USDA texture	Classification	
			Unified	AASHTO
	<u>In</u>			
LcB-----	0-28	S	SM, SP-SM	A-2
Lucy	28-72	SL, FSL, SCL	SM, SC, SC-SM	A-2, A-4, A-6
LuA-----	0-12	L, LS	SM, SC-SM	A-2, A-4
Lumbee	12-38	SCL, SL, CL	SC, CL	A-4, A-6, A-7
	38-80	LS, S, FS	SP, SM, SP-SM	A-2, A-3
LyA-----	0-7	FSL	SM, SP-SM	A-2, A-4
Lynchburg	7-62	SCL, SC, C	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6
	62-80		SC-SM, SC, CL, CL-ML	A-2, A-4, A-6
McA-----	0-6	L	SC, SC-SM	A-2
McColl	6-23	CL, SC, C	SC, CL	A-4, A-6, A-7
	23-63	SCL, CL, SC	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
	63-80	SCL, SL, SC	SM, SC, SC-SM	A-2, A-4, A-6, A-7
MgA-----	0-9	FSL	SM	A-2, A-1-b
Meggett	9-48	SCL, CL	SC, CL	A-6, A-2-6
	48-80	LS, SL	SM	A-2, A-1-b
NaB-----	0-6	LS	SM, SP-SM	A-2
Nankin	6-51	SC, C, SCL	SC, CL, ML, CL-ML	A-4, A-6, A-7
	51-72	SCL, SL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
NaC-----	0-6	LS	SM, SP-SM	A-2
Nankin	6-51	SC, C, SCL	SC, CL, ML, CL-ML	A-4, A-6, A-7
	51-72	SCL, SL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
NbB2-----	0-4	SL	SM, SC-SM	A-2, A-4
Nankin	4-52	SC, C, SCL	SC, CL, ML, CL-ML	A-4, A-6, A-7
	52-80	SCL, SL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
NbC2-----	0-4	SL	SM, SC-SM	A-2, A-4
Nankin	4-52	SC, C, SCL	SC, CL, ML, CL-ML	A-4, A-6, A-7
	52-80	SCL, SL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
NeB-----	0-8	LS	SM, SP-SM	A-2
Neeses	8-28	SC, C	CL, SC, SM, CH	A-6, A-7-5, A-7-6
	28-37	SCL, SC, C	CL-ML, SC, CL, SM	A-4, A-6, A-7
	37-85	SL, SCL	SM, SC-SM, CL-ML, SC	A-4, A-1-b, A-2-4
NeC-----	0-8	LS	SM, SP-SM	A-2
Neeses	8-28	SC, C	CL, SC, SM, CH	A-6, A-7-5, A-7-6
	28-37	SCL, SC, C	CL-ML, SC, CL, SM	A-4, A-6, A-7
	37-85	SL, SCL	SM, SC-SM, CL-ML, SC	A-4, A-1-b, A-2-4
NnB2-----	0-4	SL	SM, SC-SM	A-2
Neeses	4-19	SC, C	CL, SC, SM, CH	A-6, A-7-5, A-7-6
	19-25	SCL, SC, C	CL-ML, SC, CL, SM	A-4, A-6, A-7
	25-85	SL, SCL	SM, SC-SM, CL-ML, SC	A-4, A-1-b, A-2-4
NnC2-----	0-4	SL	SM, SC-SM	A-2
Neeses	4-19	SC, C	CL, SC, SM, CH	A-6, A-7-5, A-7-6
	19-25	SCL, SC, C	CL-ML, SC, CL, SM	A-4, A-6, A-7
	25-85	SL, SCL	SM, SC-SM, CL-ML, SC	A-4, A-1-b, A-2-4
NoA-----	0-13	LS, FS	SM	A-2
Noboco	13-47	SL, SCL, CL	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6
	47-72	SCL, CL, SC	SC-SM, SC, CL, CL-ML	A-4, A-6, A-7-6

Table 14.—Engineering Index Properties (Part I)—Continued

Map symbol and soil name	Depth	USDA texture	Classification	
			Unified	AASHTO
	<u>In</u>			
NoB-----	0-13	LS, FS	SM	A-2
Noboco	13-47	SL, SCL, CL	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6
	47-72	SCL, CL, SC	SC-SM, SC, CL, CL-ML	A-4, A-6, A-7-6
NrA-----	0-14	LS, S	SM	A-2
Norfolk	14-72	SL, SCL, CL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
NrB-----	0-14	LS, S	SM	A-2
Norfolk	14-72	SL, SCL, CL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
OcA-----	0-23	S	SM, SP-SM	A-2, A-3
Ocilla	23-65	SL, SCL, FSL	SM, CL, SC, ML	A-2, A-4, A-6
	65-80	SCL, SC, SL	SC, CL	A-4, A-6, A-7
OgA-----	0-14	LS	SM, SP-SM	A-2, A-1-b
Ogeechee	14-52	SCL, CL	SC, CL	A-6
	52-80	SCL, CL, SL	SC, CL	A-6, A-2
OrA-----	0-16	LS	SM	A-2
Orangeburg	16-80	SCL, SL	SC, CL, SM, SC-SM	A-6, A-4
OrB-----	0-16	LS	SM	A-2
Orangeburg	16-80	SCL, SL	SC, CL, SM, SC-SM	A-6, A-4
OsA-----	0-3	LS	SP-SM	A-2, A-3
Osier	3-42	S, LS, LFS	SP-SM, SM	A-2, A-3
	42-80	COS, S, FS	SP, SP-SM	A-1, A-3, A-2-4
PmA-----	0-50	LS	SM	A-2-4
Plummer	50-80	SL, SCL, FSL	SM, SC, SC-SM	A-2-4, A-4
RaA-----	0-12	FSL	SM, ML	A-2, A-4
Rains	12-36	FSL, SCL, SL	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
	36-63	SCL, CL, SC	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7
	63-80	SL, SCL, SC	SM, SC, ML, CL	A-2, A-4, A-6
RmA-----	0-13	SCL	SM, SC-SM	A-4
Rembert	13-51	C, SC, CL	CL, CH	A-6, A-7
	51-63	SCL, CL, SC	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6
	63-80	SCL, SL, LS	SC, SM, SC-SM	A-2, A-4
SeA-----	0-9	S	SM, SP-SM	A-2, A-3
Seagate	9-16	FS, LFS, S	SM, SP-SM	A-2
	16-30	FS, S	SM, SP-SM	A-2, A-3
	30-68	SL, SCL	SM, SC-SM	A-2, A-4
	68-80	CL, SCL	CL	A-6, A-7
TrB-----	0-52	S	SM, SP-SM	A-2
Troup	52-80	SCL, SL, FSL	SC, SC-SM, CL-ML, CL	A-4, A-2, A-6
TrC-----	0-52	S	SM, SP-SM	A-2
Troup	52-80	SCL, SL, FSL	SC, SC-SM, CL-ML, CL	A-4, A-2, A-6
UcB-----	0-24	S	SM	A-2, A-1-b
Uchee	24-42	SL, SCL	SC, SC-SM	A-2, A-4, A-6
	42-51	SCL, SC, C	CH, CL, SC	A-7
	51-65	SL, SCL, SC	CH, CL, SC	A-6, A-7, A-2-6
	65-80	SL, LS	SP-SM, SM, SC-SM	A-2, A-1-b

Table 14.—Engineering Index Properties (Part I)—Continued

Map symbol and soil name	Depth	USDA texture	Classification	
			Unified	AASHTO
	<u>In</u>			
UcC-----	0-24	S	SM	A-2, A-1-b
Uchee	24-42	SL, SCL	SC, SC-SM	A-2, A-4, A-6
	42-51	SCL, SC, C	CH, CL, SC	A-7
	51-65	SL, SCL, SC	CH, CL, SC	A-6, A-7, A-2-6
	65-80	SL, LS	SP-SM, SM, SC-SM	A-2, A-1-b
Ud-----	0-60	SL	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6, A-7
Udorthents				
WgB-----	0-33	S	SP-SM, SM	A-1, A-2, A-3
Wagram	33-80	SCL, SL	SC	A-2, A-4, A-6, A-7
WhA-----	0-9	LS	SM, SC-SM	A-2, A-4
Wahee	9-44	C, CL, SIC	CL, CH	A-6, A-7
	44-80	Variable	---	---

Table 15.—Engineering Index Properties (Part II)

Map symbol and soil name	Depth	Frag- ments >3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			4	10	40	200		
	In	Pct					Pct	
AeB----- Ailey	0-31	0	85-100	75-95	50-75	5-12	0-14	0-0
	31-47	0	90-100	75-100	60-90	30-40	20-40	3-16
	47-75	0	90-100	75-100	55-90	20-50	20-40	3-16
	75-80	0	85-100	75-100	50-85	15-40	0-40	0-14
AeC----- Ailey	0-24	0	85-100	75-95	50-75	5-12	0-14	0-0
	24-36	0	90-100	75-100	60-90	30-40	20-40	3-16
	36-50	0	90-100	75-100	55-90	20-50	20-40	3-16
	50-72	0	85-100	75-100	50-85	15-40	0-40	0-14
AlB----- Alaga	0-5	0	100	90-100	40-70	5-25	0-14	0-0
	5-80	0	100	100	50-85	10-25	0-14	0-0
AnA----- Albany	0-44	0	100	100	75-90	10-20	0-14	0-0
	44-80	0	97-100	95-100	70-100	20-50	0-40	0-17
AuB----- Autryville	0-24	0	100	100	50-100	5-20	10-20	0-0
	24-42	0	100	100	50-100	15-30	15-30	0-3
	42-63	0	100	100	50-100	5-20	10-20	0-0
	63-80	0	100	100	60-100	20-49	15-40	0-10
BaB----- Barnwell	0-8	0-3	90-100	80-100	45-85	15-40	15-18	0-7
	8-45	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	45-53	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	53-75	0-5	70-100	55-100	30-90	20-60	15-40	0-25
BaC----- Barnwell	0-8	0-3	90-100	80-100	45-85	15-40	15-18	0-7
	8-45	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	45-53	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	53-75	0-5	70-100	55-100	30-90	20-60	15-40	0-25
BeB2----- Barnwell	0-8	0-3	90-100	80-100	50-95	25-65	15-25	0-15
	8-45	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	45-53	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	53-75	0-5	70-100	55-100	30-90	20-60	15-40	0-25
BeC2----- Barnwell	0-8	0-3	90-100	80-100	50-95	25-65	15-25	0-15
	8-45	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	45-53	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	53-75	0-5	70-100	55-100	30-90	20-60	15-40	0-25
BnA----- Blanton	0-44	0	100	90-100	65-100	5-20	0-14	0-0
	44-80	0	100	95-100	69-100	25-50	12-45	3-22
BnB----- Blanton	0-44	0	100	90-100	65-100	5-20	0-14	0-0
	44-80	0	100	95-100	69-100	25-50	12-45	3-22
BnC----- Blanton	0-44	0	100	90-100	65-100	5-20	0-14	0-0
	44-80	0	100	95-100	69-100	25-50	12-45	3-22
BoA----- Bonneau	0-26	0	100	100	60-95	8-20	0-14	0-0
	26-41	0	100	100	60-100	30-50	21-40	4-21
	41-80	0	100	100	60-95	25-60	20-40	4-18
BoB----- Bonneau	0-26	0	100	100	60-95	8-20	0-14	0-0
	26-47	0	100	100	60-100	30-50	21-40	4-21
	47-80	0	100	100	60-95	25-60	20-40	4-18

Table 15.—Engineering Index Properties (Part II)—Continued

Map symbol and soil name	Depth	Frag- ments	Percentage passing sieve number--				Liquid limit	Plas- ticity index
		>3						
		inches	4	10	40	200		
	In	Pct					Pct	
ByA----- Byars	0-12	0	98-100	98-100	70-95	35-65	0-30	0-7
	12-52	0	98-100	98-100	90-100	60-95	39-75	17-42
	52-80	0	98-100	98-100	90-100	75-98	30-45	8-20
CoA----- Coxville	0-5	0	100	100	85-97	46-75	20-46	3-15
	5-62	0	100	100	85-98	50-85	40-65	12-35
	62-80	---	---	---	---	---	---	---
EcA----- Echaw	0-5	0	100	100	50-80	4-10	0-14	0-0
	5-33	0	100	100	50-75	5-30	0-14	0-0
	33-58	0	100	100	50-70	5-20	0-14	0-0
	58-80	0	100	100	50-75	5-30	0-14	0-0
EoA----- Elloree	0-6	0	100	98-100	75-100	10-25	0-14	0-0
	6-23	0	100	98-100	65-100	9-27	0-14	0-0
	23-42	0	100	98-100	60-100	15-35	0-30	0-12
	42-69	0	100	98-100	60-100	15-45	0-40	0-18
	69-80	---	---	---	---	---	0-14	---
EuA----- Eunola	0-9	0	100	98-100	60-85	30-50	0-14	0-0
	9-22	0	100	90-100	75-95	30-60	0-36	0-15
	22-55	0	100	98-100	60-70	30-40	0-30	0-10
	55-80	0	100	98-100	50-75	5-30	0-14	0-0
FsA: Fluvaquents----	0-38	0	100	98-100	60-85	5-12	0-14	0-0
	38-68	0	98-100	95-100	40-90	8-35	0-14	0-0
	68-80	0	60-100	50-100	40-100	30-40	0-30	0-0
Osier-----	0-3	0	100	98-100	60-85	5-12	0-14	0-0
	3-42	0	100	95-100	65-96	5-20	0-14	0-0
	42-80	0	100	90-100	40-60	2-10	0-14	0-0
Grifton-----	0-7	0	100	95-100	60-100	12-35	10-25	0-4
	7-56	0	98-100	95-100	60-100	31-60	20-40	8-15
	56-80	---	---	---	---	---	---	---
FxB----- Foxworth	0-6	0	100	100	60-100	5-12	0-14	0-0
	6-42	0	100	100	60-100	5-12	0-14	0-0
	42-80	0	100	100	50-100	1-12	0-14	0-0
GoA----- Goldsboro	0-5	0	95-100	95-100	50-100	15-45	15-25	0-14
	5-13	0	98-100	95-100	60-100	25-55	20-37	4-18
	13-80	0	95-100	90-100	65-95	36-70	25-55	6-32
GsA: Grifton-----	0-7	0	100	95-100	60-100	20-45	20-30	0-7
	7-56	0	98-100	95-100	60-100	31-60	20-40	8-15
	56-80	---	---	---	---	---	---	---
Osier-----	0-3	0	100	98-100	60-85	5-12	0-14	0-0
	3-42	0	100	95-100	65-96	5-20	0-14	0-0
	42-80	0	100	90-100	40-60	2-10	0-14	0-0
HbA----- Hobonny	0-65	0	---	---	---	---	---	---
	65-80	0	100	100	70-95	5-20	10-20	0-0
JnA----- Johns	0-9	0	100	95-100	70-98	20-49	15-30	0-10
	9-27	0	100	95-100	60-98	30-65	20-45	5-25
	27-80	0	95-100	95-100	51-90	4-25	10-20	0-0

Table 15.—Engineering Index Properties (Part II)—Continued

Map symbol and soil name	Depth	Frag- ments	Percentage passing sieve number--				Liquid limit	Plas- ticity index
		>3						
	inches	4	10	40	200			
	In	Pct					Pct	
JsA----- Johnston	0-26	0	100	100	90-100	51-75	20-45	2-14
	26-36	0	100	100	50-100	5-30	15-20	0-0
	36-72	0	100	100	50-100	25-49	15-35	0-10
LcB----- Lucy	0-28	0	95-100	90-100	50-75	10-30	0-14	0-0
	28-72	0	97-100	95-100	55-95	15-50	10-30	0-15
LuA----- Lumbree	0-12	0	100	85-100	65-98	15-45	10-25	0-7
	12-38	0	100	90-100	65-98	36-60	19-45	7-25
	38-80	0	90-100	85-100	50-90	4-25	10-20	0-0
LyA----- Lynchburg	0-7	0	92-100	90-100	60-100	12-40	0-25	0-4
	7-62	0	92-100	90-100	70-100	25-67	15-40	4-18
	62-80	0	95-100	92-100	70-100	25-73	15-40	4-20
McA----- McColl	0-6	0	100	95-100	60-90	20-35	15-30	4-12
	6-23	0	100	95-100	80-98	36-75	25-50	8-23
	23-63	0	100	95-100	65-90	32-60	20-40	3-15
	63-80	0	100	95-100	60-80	30-50	15-52	3-22
MgA----- Meggett	0-9	0	100	90-100	45-70	15-35	0-30	0-7
	9-48	0	100	90-100	70-90	30-75	30-40	16-23
	48-80	0	100	90-100	45-70	15-35	0-30	0-7
NaB----- Nankin	0-6	0	85-100	85-100	50-85	10-35	0-14	0-0
	6-51	0	98-100	95-100	75-95	40-70	25-45	7-20
	51-72	0	98-100	95-100	70-85	25-55	20-40	4-16
NaC----- Nankin	0-6	0	85-100	85-100	50-85	10-35	0-14	0-0
	6-51	0	98-100	95-100	75-95	40-70	25-45	7-20
	51-72	0	98-100	95-100	70-85	25-55	20-40	4-16
NbB2----- Nankin	0-4	0	85-100	85-100	70-90	25-45	0-25	0-4
	4-52	0	98-100	95-100	75-95	40-70	25-45	7-20
	52-80	0	98-100	95-100	70-85	25-55	20-40	4-16
NbC2----- Nankin	0-4	0	85-100	85-100	70-90	25-45	0-25	0-4
	4-52	0	98-100	95-100	75-95	40-70	25-45	7-20
	52-80	0	98-100	95-100	70-85	25-55	20-40	4-16
NeB----- Neeses	0-8	0	90-100	90-100	55-90	12-30	0-20	0-7
	8-28	0	95-100	95-100	82-98	48-70	30-65	11-30
	28-37	0	95-100	92-100	45-98	40-75	25-50	8-30
	37-85	0	95-100	92-100	45-98	20-60	15-30	0-10
NeC----- Neeses	0-8	0	90-100	90-100	55-90	12-30	0-20	0-7
	8-28	0	95-100	95-100	82-98	48-70	30-65	11-30
	28-37	0	95-100	92-100	45-98	40-75	25-50	8-30
	37-85	0	95-100	92-100	45-98	20-60	15-30	0-10
NnB2----- Neeses	0-4	0	90-100	90-100	60-92	15-35	15-20	0-7
	4-19	0	95-100	95-100	82-98	48-70	30-65	11-30
	19-25	0	95-100	92-100	45-98	40-75	25-50	8-30
	25-85	0	95-100	92-100	45-98	20-60	15-30	0-10
NnC2----- Neeses	0-4	0	90-100	90-100	60-92	15-35	15-20	0-7
	4-19	0	95-100	95-100	82-98	48-70	30-65	11-30
	19-25	0	95-100	92-100	45-98	40-75	25-50	8-30
	25-85	0	95-100	92-100	45-98	20-60	15-30	0-10

Table 15.—Engineering Index Properties (Part II)—Continued

Map symbol and soil name	Depth	Frag- ments >3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			4	10	40	200		
	In	Pct					Pct	
NoA----- Noboco	0-13	0	95-100	92-100	50-95	13-30	0-20	0-0
	13-47	0	95-100	95-100	70-96	30-63	20-38	4-15
	47-72	0	98-100	98-100	70-98	36-72	20-52	4-23
NoB----- Noboco	0-13	0	95-100	92-100	50-95	13-30	0-20	0-0
	13-47	0	95-100	95-100	70-96	30-63	20-38	4-15
	47-72	0	98-100	98-100	70-98	36-72	20-52	4-23
NrA----- Norfolk	0-14	0	95-100	92-100	50-95	13-30	15-20	0-0
	14-72	0	95-100	91-100	70-96	30-63	20-38	4-15
NrB----- Norfolk	0-14	0	95-100	92-100	50-95	13-30	15-20	0-0
	14-72	0	95-100	91-100	70-96	30-63	20-38	4-15
OcA----- Ocilla	0-23	0	100	95-100	70-100	8-35	0-14	0-0
	23-65	0	100	95-100	80-100	20-55	20-40	0-18
	65-80	0	100	95-100	80-100	36-60	20-45	7-20
OgA----- Ogeechee	0-14	0	100	95-100	48-70	10-25	0-14	0-0
	14-52	0	100	95-100	65-90	40-55	27-40	12-23
	52-80	0	100	90-100	50-65	25-45	30-40	15-25
OrA----- Orangeburg	0-16	0	98-100	95-100	60-87	14-28	0-14	0-0
	16-80	0	98-100	95-100	71-96	38-58	22-40	3-19
OrB----- Orangeburg	0-16	0	98-100	95-100	60-87	14-28	0-14	0-0
	16-80	0	98-100	95-100	71-96	38-58	22-40	3-19
OsA----- Osier	0-3	0	100	98-100	60-85	5-12	0-14	0-0
	3-42	0	100	95-100	65-96	5-20	0-14	0-0
	42-80	0	100	90-100	40-60	2-10	0-14	0-0
PmA----- Plummer	0-50	0	100	100	75-96	13-26	0-14	0-0
	50-80	0	100	97-100	76-96	20-48	0-30	0-10
RaA----- Rains	0-12	0	100	95-100	50-85	25-56	0-35	0-10
	12-36	0	100	95-100	55-98	30-70	18-40	4-20
	36-63	0	100	98-100	60-98	36-72	18-45	4-28
	63-80	0	100	95-100	60-95	30-60	15-40	3-18
RmA----- Rembert	0-13	0	100	95-100	60-80	36-50	0-20	0-7
	13-51	0	100	98-100	85-98	55-85	35-53	15-30
	51-63	0	100	95-100	67-98	30-60	15-35	4-15
	63-80	0	100	98-100	60-90	20-50	0-30	0-10
SeA----- Seagate	0-9	0	100	100	90-100	5-20	10-14	0-0
	9-16	0	100	100	90-100	10-25	10-20	0-0
	16-30	0	100	100	90-100	5-20	10-14	0-0
	30-68	0	100	100	85-100	20-45	15-40	0-7
	68-80	0	100	100	80-100	55-95	35-49	16-27
TrB----- Troup	0-52	0	95-100	90-100	50-75	10-30	0-14	0-0
	52-80	0	95-100	90-100	60-90	24-55	19-40	4-20
TrC----- Troup	0-52	0	95-100	90-100	50-75	10-30	0-14	0-0
	52-80	0	95-100	90-100	60-90	24-55	19-40	4-20

Table 15.—Engineering Index Properties (Part II)—Continued

Map symbol and soil name	Depth	Frag- ments >3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			4	10	40	200		
	In	Pct					Pct	
UcB-----	0-24	0	90-100	80-100	40-70	15-30	0-14	0-0
Uchee	24-42	0	90-100	80-100	50-80	25-50	20-40	6-20
	42-51	0	90-100	80-100	65-90	40-70	41-70	18-38
	51-65	0	85-100	80-100	50-80	30-65	35-65	15-35
	65-80	0	95-100	90-100	40-70	10-35	0-25	0-7
UcC-----	0-24	0	90-100	80-100	40-70	15-30	0-14	0-0
Uchee	24-42	0	90-100	80-100	50-80	25-50	20-40	6-20
	42-51	0	90-100	80-100	65-90	40-70	41-70	18-38
	51-65	0	85-100	80-100	50-80	30-65	35-65	15-35
	65-80	0	95-100	90-100	40-70	10-35	0-25	0-7
Ud-----	0-60	0-3	95-100	90-100	70-98	30-90	20-45	4-25
Udorthents								
WgB-----	0-33	0	95-100	90-100	45-80	5-15	10-14	0-0
Wagram	33-80	0	100	98-100	60-95	31-49	21-41	8-25
WhA-----	0-9	0	100	95-100	50-98	30-50	0-28	0-7
Wahee	9-44	0	100	100	85-100	51-92	38-81	16-54
	44-80	---	---	---	---	--	---	---

Table 16.--Physical and Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH		K	T		Pct
AeB----- Ailey	0-31	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low-----	.10	4	1	.5-1
	31-47	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low-----	.24			---
	47-75	18-36	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low-----	.24			---
	75-80	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low-----	.15			---
AeC----- Ailey	0-24	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low-----	.10	4	1	.5-1
	24-36	15-36	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low-----	.24			---
	36-50	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low-----	.24			---
	50-72	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low-----	.15			---
AlB----- Alaga	0-5	1-10	1.60-1.75	6.0-20	0.05-0.09	3.6-6.0	Low-----	.10	5	1	.5-3
	5-80	2-12	1.60-1.75	6.0-20	0.05-0.09	3.6-6.0	Low-----	.10			0-.5
AnA----- Albany	0-44	1-10	1.40-1.55	6.0-20	0.02-0.04	3.6-6.5	Low-----	.10	5	1	1-2
	44-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	3.6-6.0	Low-----	.24			0-.5
AuB----- Autryville	0-24	2-10	1.60-1.70	6.0-20	0.04-0.09	4.5-6.5	Low-----	.10	5	2	.5-1
	24-42	10-25	1.40-1.60	2.0-6.0	0.08-0.13	4.5-5.5	Low-----	.10			0-.5
	42-63	2-8	1.60-1.70	6.0-20	0.03-0.08	4.5-5.5	Low-----	.10			0-.5
	63-80	10-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.17			0-.5
BaB----- Barnwell	0-8	5-15	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low-----	.20	4	2	.5-2
	8-45	18-35	1.45-1.60	0.2-2.0	0.10-0.18	4.5-6.0	Low-----	.28			0-.5
	45-53	20-45	1.55-1.75	0.06-0.2	0.10-0.16	4.5-6.0	Low-----	.20			0-.5
	53-75	5-45	1.45-1.75	0.06-2.0	0.08-0.18	4.5-6.0	Low-----	.20			0-.5
BaC----- Barnwell	0-8	5-15	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low-----	.20	4	2	.5-2
	8-45	18-35	1.45-1.60	0.2-2.0	0.10-0.18	4.5-6.0	Low-----	.28			0-.5
	45-53	20-45	1.55-1.75	0.06-0.2	0.10-0.16	4.5-6.0	Low-----	.20			0-.5
	53-75	5-45	1.45-1.75	0.06-2.0	0.08-0.18	4.5-6.0	Low-----	.20			0-.5
BeB2----- Barnwell	0-8	15-18	1.30-1.40	2.0-6.0	0.10-0.17	4.5-6.0	Low-----	.24	4	3	.5-2
	8-45	18-35	1.45-1.60	0.2-2.0	0.10-0.18	4.5-6.0	Low-----	.28			0-.5
	45-53	20-45	1.55-1.75	0.06-0.2	0.10-0.16	4.5-6.0	Low-----	.20			0-.5
	53-75	5-45	1.45-1.75	0.06-2.0	0.08-0.18	4.5-6.0	Low-----	.20			0-.5
BeC2----- Barnwell	0-8	15-18	1.30-1.40	2.0-6.0	0.10-0.17	4.5-6.0	Low-----	.24	4	3	.5-2
	8-45	18-35	1.45-1.60	0.2-2.0	0.10-0.18	4.5-6.0	Low-----	.28			0-.5
	45-53	20-45	1.55-1.75	0.06-0.2	0.10-0.16	4.5-6.0	Low-----	.20			0-.5
	53-75	5-45	1.45-1.75	0.06-2.0	0.08-0.18	4.5-6.0	Low-----	.20			0-.5
BnA----- Blanton	0-44	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low-----	.10	5	1	.5-1
	44-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low-----	.20			0-.5
BnB----- Blanton	0-44	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low-----	.10	5	1	.5-1
	44-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low-----	.20			0-.5
BnC----- Blanton	0-44	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low-----	.10	5	1	.5-1
	44-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low-----	.20			0-.5
BoA----- Bonneau	0-26	2-8	1.30-1.70	6.0-20	0.04-0.08	4.5-6.0	Low-----	.10	5	1	.5-2
	26-41	13-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.20			0-.5
	41-80	15-40	1.40-1.60	0.6-2.0	0.10-0.16	4.5-5.5	Low-----	.20			0-.5
BoB----- Bonneau	0-26	2-8	1.30-1.70	6.0-20	0.04-0.08	4.5-6.0	Low-----	.10	5	1	.5-2
	26-47	13-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.20			0-.5
	47-80	15-40	1.40-1.60	0.6-2.0	0.10-0.16	4.5-5.5	Low-----	.20			0-.5

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH		K	T		Pct
ByA----- Byars	0-12	10-20	1.20-1.50	0.6-2.0	0.11-0.16	3.6-5.5	Low-----	.20	5	3	2-9
	12-52	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate	.32			.5-1
	52-80	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate	.32			0-.5
CoA----- Coxville	0-5	5-27	1.45-1.65	0.6-2.0	0.12-0.17	3.5-5.5	Low-----	.24	5	3	2-4
	5-62	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.5-5.5	Moderate	.32			0-1
	62-80	---	---	---	---	---	-----	---			---
EcA----- Echaw	0-5	1-8	1.40-1.60	2.0-20	0.03-0.08	4.5-6.0	Low-----	.10	5	1	.5-1
	5-33	2-10	1.40-1.60	6.0-20	0.05-0.10	4.5-6.0	Low-----	.10			0-.5
	33-58	2-10	1.50-1.70	2.0-20	0.03-0.08	4.5-6.0	Low-----	.10			.5-2
	58-80	2-10	1.50-1.70	6.0-20	0.03-0.08	4.5-6.0	Low-----	.10			0-.5
EoA----- Ellore	0-6	1-8	1.30-1.50	6.0-20	0.05-0.10	4.5-7.3	Low-----	.10	5	2	1-4
	6-23	1-6	1.50-1.70	6.0-20	0.02-0.10	5.1-7.3	Low-----	.10			.5-2
	23-42	9-25	1.30-1.60	2.0-6.0	0.10-0.15	5.1-8.4	Low-----	.15			.5-2
	42-69	5-25	1.30-1.50	2.0-6.0	0.10-0.17	5.1-8.4	Low-----	.17			.5-2
	69-80	---	---	---	---	---	-----	---			---
EuA----- Eunola	0-9	10-20	1.35-1.65	2.0-6.0	0.10-0.14	4.5-5.5	Low-----	.20	5	3	.5-2
	9-22	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low-----	.28			.2-1
	22-55	8-25	1.35-1.65	2.0-6.0	0.10-0.16	4.5-5.5	Low-----	.24			0-.5
	55-80	2-11	1.45-1.75	6.0-20	0.02-0.06	4.5-5.5	Low-----	.20			0-.5
FsA:											
Fluvaquents-- Osier-----	0-38	2-12	1.40-1.65	6.0-20	0.06-0.10	4.5-5.5	Low-----	.15	5	8	1-5
	38-68	1-10	1.40-1.60	6.0-20	0.03-0.10	4.5-5.5	Low-----	.10			0-.5
	68-80	2-18	1.30-1.60	0.6-2.0	0.12-0.20	4.5-5.5	Low-----	.37			---
Grifton-----	0-7	2-10	1.45-1.70	6.0-20	0.07-0.10	4.5-6.5	Low-----	.17	5	2	2-4
	7-56	18-35	1.35-1.45	0.6-2.0	0.12-0.17	4.5-7.3	Low-----	.24			0-1
	56-80	---	---	---	---	---	-----	---			---
FxB----- Foxworth	0-6	1-8	1.25-1.45	6.0-20	0.05-0.10	4.5-6.0	Low-----	.10	5	1	.5-2
	6-42	1-8	1.40-1.55	6.0-20	0.05-0.10	4.5-6.0	Low-----	.10			0-.5
	42-80	1-6	1.45-1.65	6.0-20	0.02-0.08	4.5-6.0	Low-----	.10			0-.5
GoA----- Goldsboro	0-5	5-15	1.40-1.60	2.0-6.0	0.10-0.15	3.5-6.0	Low-----	.20	5	3	.5-2
	5-13	18-30	1.30-1.50	0.6-2.0	0.11-0.17	3.5-5.5	Low-----	.24			0-.5
	13-80	20-34	1.30-1.40	0.6-2.0	0.11-0.20	3.5-5.5	Low-----	.24			0-.5
GsA:											
Grifton----- Osier-----	0-7	7-18	1.45-1.65	2.0-6.0	0.10-0.14	4.5-6.5	Low-----	.20	5	3	2-4
	7-56	18-35	1.35-1.45	0.6-2.0	0.12-0.17	4.5-7.3	Low-----	.24			0-1
	56-80	---	---	---	---	---	-----	---			---
HbA----- Hobonny	0-3	1-10	1.35-1.60	6.0-20	0.03-0.10	3.6-6.0	Low-----	.10	5	2	2-5
	3-42	1-10	1.40-1.60	6.0-20	0.03-0.10	3.6-6.0	Low-----	.10			---
	42-80	2-5	1.40-1.60	20-20	0.02-0.05	3.6-6.0	Low-----	.05			---
JnA----- Johns	0-65	0	0.20-0.65	0.6-6.0	0.24-0.40	3.5-5.5	Low-----		2	2	20-80
	65-80	5-10	1.60-1.75	6.0-20	0.10-0.20	3.5-5.5	Low-----	.10			.5-5
JnA----- Johns	0-9	5-15	1.45-1.65	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	.20	5	3	.5-2
	9-27	18-35	1.40-1.60	0.6-2.0	0.12-0.15	4.5-5.5	Low-----	.24			0-.5
	27-80	2-10	1.60-1.70	6.0-20	0.03-0.06	4.5-5.5	Low-----	.10			0-.5

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH		K	T		Pct
JsA----- Johnston	0-26	7-18	1.25-1.45	2.0-6.0	0.20-0.26	4.5-5.5	Low-----	.17	5	5	8-15
	26-36	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	Low-----	.17			.5-3
	36-72	5-20	1.45-1.65	6.0-20	0.06-0.12	4.5-5.5	Low-----	.17			0-2
LcB----- Lucy	0-28	1-10	1.30-1.70	6.0-20	0.05-0.10	5.1-6.0	Low-----	.10	5	1	.5-1
	28-72	10-30	1.40-1.60	2.0-6.0	0.10-0.12	3.5-5.5	Low-----	.24			---
LuA----- Lumbree	0-12	4-18	1.55-1.70	2.0-6.0	0.08-0.12	4.5-5.5	Low-----	.24	5	3	2-4
	12-38	18-35	1.30-1.45	0.6-2.0	0.12-0.16	4.5-5.5	Low-----	.32			0-1
	38-80	1-10	1.60-1.70	6.0-20	0.03-0.06	4.5-5.5	Low-----	.10			0-.5
LyA----- Lynchburg	0-7	2-10	1.40-1.70	6.0-20	0.07-0.10	3.6-6.0	Low-----	.15	5	2	.5-5
	7-62	18-35	1.30-1.50	0.6-2.0	0.12-0.16	3.6-5.5	Low-----	.20			0-.5
	62-80	20-50	1.30-1.45	0.6-2.0	0.12-0.18	3.6-5.5	Low-----	.20			0-.5
McA----- McColl	0-6	8-18	1.30-1.60	0.6-2.0	0.10-0.16	4.5-7.3	Low-----	.24	5	3	1-8
	6-23	35-60	1.30-1.50	0.2-0.6	0.13-0.17	4.5-5.5	Low-----	.24			0-.5
	23-63	25-45	1.75-1.95	0.06-0.2	0.07-0.11	4.5-5.5	Low-----	.24			0-.5
	63-80	15-40	1.50-1.70	0.2-2.0	0.08-0.12	4.5-5.5	Low-----	.32			0-.5
MgA----- Meggett	0-9	5-18	1.40-1.60	6.0-20	0.06-0.11	4.5-6.5	Low-----	.17	5	2	.5-4
	9-48	18-35	1.30-1.50	0.06-0.2	0.10-0.15	5.1-8.4	Low-----	.20			---
	48-80	8-18	1.30-1.60	2.0-6.0	0.06-0.12	6.1-8.4	Low-----	.15			---
NaB----- Nankin	0-6	5-12	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.5	Low-----	.17	3	2	.5-1
	6-51	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low-----	.24			---
	51-72	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			---
NaC----- Nankin	0-6	5-12	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.5	Low-----	.17	3	2	.5-1
	6-51	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low-----	.24			---
	51-72	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			---
NbB2----- Nankin	0-4	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-5.5	Low-----	.28	3	3	.5-1
	4-52	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low-----	.24			---
	52-80	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			---
NbC2----- Nankin	0-4	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-5.5	Low-----	.28	3	3	.5-1
	4-52	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low-----	.24			---
	52-80	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			---
NeB----- Neeses	0-8	5-12	1.45-1.55	2.0-6.0	0.05-0.08	3.5-5.5	Low-----	.20	3	2	.5-1
	8-28	35-50	1.30-1.60	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.28			0-.5
	28-37	25-50	1.70-1.90	0.06-0.6	0.08-0.12	3.5-5.5	Low-----	.28			0-.5
	37-85	15-35	1.55-1.75	0.6-2.0	0.05-0.12	3.5-5.5	Low-----	.24			0-.5
NeC----- Neeses	0-8	5-12	1.45-1.55	2.0-6.0	0.05-0.08	3.5-5.5	Low-----	.20	3	2	.5-1
	8-28	35-50	1.30-1.60	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.28			0-.5
	28-37	25-50	1.70-1.90	0.06-0.6	0.08-0.12	3.5-5.5	Low-----	.28			0-.5
	37-85	15-35	1.55-1.75	0.6-2.0	0.05-0.12	3.5-5.5	Low-----	.24			0-.5
NnB2----- Neeses	0-4	5-15	1.45-1.55	2.0-6.0	0.05-0.08	3.5-5.5	Low-----	.24	3	2	.5-1
	4-19	35-50	1.30-1.60	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.28			0-.5
	19-25	25-50	1.70-1.90	0.06-0.6	0.08-0.12	3.5-5.5	Low-----	.28			0-.5
	25-85	15-35	1.55-1.75	0.6-2.0	0.05-0.12	3.5-5.5	Low-----	.24			0-.5
NnC2----- Neeses	0-4	5-15	1.45-1.55	2.0-6.0	0.05-0.08	3.5-5.5	Low-----	.24	3	2	.5-1
	4-19	35-50	1.30-1.60	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.28			0-.5
	19-25	25-50	1.70-1.90	0.06-0.6	0.08-0.12	3.5-5.5	Low-----	.28			0-.5
	25-85	15-35	1.55-1.75	0.6-2.0	0.05-0.12	3.5-5.5	Low-----	.24			0-.5

Table 16.—Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH		K	T		Pct
NoA----- Noboco	0-13	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low-----	.10	5	2	.5-2
	13-47	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low-----	.24			0-.5
	47-72	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low-----	.24			0-.5
NoB----- Noboco	0-13	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low-----	.10	5	2	.5-2
	13-47	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low-----	.24			0-.5
	47-72	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low-----	.24			0-.5
NrA----- Norfolk	0-14	2-8	1.55-1.70	6.0-20	0.06-0.11	3.5-6.0	Low-----	.17	5	2	.5-2
	14-72	18-35	1.30-1.65	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.24			0-.5
NrB----- Norfolk	0-14	2-8	1.55-1.70	6.0-20	0.06-0.11	3.5-6.0	Low-----	.17	5	2	.5-2
	14-72	18-35	1.30-1.65	0.6-2.0	0.10-0.18	3.5-5.5	Low-----	.24			0-.5
OcA----- Ocilla	0-23	3-10	1.45-1.65	2.0-20	0.05-0.07	4.5-5.5	Low-----	.10	5	2	1-2
	23-65	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low-----	.24			0
	65-80	15-40	1.55-1.70	0.2-2.0	0.09-0.12	3.5-5.5	Low-----	.24			0
OgA----- Ogeechee	0-14	5-10	1.40-1.50	2.0-6.0	0.03-0.05	3.5-5.5	Low-----	.10	5	2	1-2
	14-52	20-35	1.55-1.65	0.6-2.0	0.08-0.14	4.5-5.5	Low-----	.15			---
	52-80	15-30	1.55-1.65	0.6-2.0	0.10-0.14	4.5-6.0	Low-----	.15			---
OrA----- Orangeburg	0-16	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-6.0	Low-----	.10	5	2	.5-1
	16-80	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low-----	.24			---
OrB----- Orangeburg	0-16	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-6.0	Low-----	.10	5	2	.5-1
	16-80	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low-----	.24			---
OsA----- Osier	0-3	1-10	1.35-1.60	6.0-20	0.03-0.10	3.6-6.0	Low-----	.10	5	2	2-5
	3-42	1-10	1.40-1.60	6.0-20	0.03-0.10	3.6-6.0	Low-----	.10			---
	42-80	2-5	1.40-1.60	20-20	0.02-0.05	3.6-6.0	Low-----	.05			---
PmA----- Plummer	0-50	1-10	1.35-1.65	6.0-20	0.03-0.10	3.6-5.5	Low-----	.10	5	2	1-3
	50-80	15-30	1.50-1.70	0.2-2.0	0.07-0.15	3.6-5.5	Low-----	.15			---
RaA----- Rains	0-12	5-20	1.30-1.60	2.0-6.0	0.10-0.14	3.6-6.5	Low-----	.20	5	3	1-6
	12-36	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low-----	.24			.5-1
	36-63	18-40	1.30-1.50	0.6-2.0	0.10-0.15	3.6-5.5	Low-----	.28			.5-1
	63-80	15-45	1.30-1.60	0.6-2.0	0.10-0.15	3.6-5.5	Low-----	.28			.5-1
RmA----- Rembert	0-13	5-20	1.40-1.60	0.6-2.0	0.10-0.14	4.5-6.5	Low-----	.20	5	3	1-5
	13-51	35-60	1.20-1.50	0.06-0.2	0.12-0.16	4.5-5.5	Low-----	.20			0-.5
	51-63	22-45	1.30-1.50	0.6-2.0	0.12-0.15	4.5-5.5	Low-----	.17			0-.5
	63-80	8-25	1.30-1.60	0.6-6.0	0.07-0.12	4.5-5.5	Low-----	.17			0-.5
SeA----- Seagate	0-9	0-3	1.60-1.70	6.0-20	0.03-0.06	3.5-6.0	Low-----	.10	5	1	0-.5
	9-16	3-10	1.60-1.70	6.0-20	0.05-0.12	3.5-6.0	Low-----	.15			0-.5
	16-30	1-5	1.60-1.70	2.0-6.0	0.03-0.06	3.5-6.0	Low-----	.10			.5-2
	30-68	10-35	1.40-1.50	0.6-2.0	0.12-0.20	3.5-6.0	Low-----	.28			0-.5
	68-80	20-40	1.30-1.40	0.6-2.0	0.15-0.20	3.5-6.0	Moderate	.32			0-.5
TrB----- Troup	0-52	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Low-----	.10	5	1	.5-1
	52-80	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low-----	.20			---
TrC----- Troup	0-52	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Low-----	.10	5	1	.5-1
	52-80	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low-----	.20			---

Table 16.--Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH		K	T		Pct
UcB----- Uchee	0-24	3-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low-----	.10	5	2	2-3
	24-42	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			0-.5
	42-51	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate	.28			0-.5
	51-65	15-40	1.40-1.60	0.2-2.0	0.10-0.16	4.5-5.5	Moderate	.28			0-.5
	65-80	5-15	1.40-1.60	0.6-6.0	0.06-0.12	4.5-5.5	Low-----	.24			0-.5
UcC----- Uchee	0-24	3-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low-----	.10	5	2	2-3
	24-42	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	.24			0-.5
	42-51	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate	.28			0-.5
	51-65	15-40	1.40-1.60	0.2-2.0	0.10-0.16	4.5-5.5	Moderate	.28			0-.5
	65-80	5-15	1.40-1.60	0.6-6.0	0.06-0.12	4.5-5.5	Low-----	.24			0-.5
Ud----- Udorthents	0-60	10-50	1.30-1.65	0.06-2.0	0.10-0.17	4.5-7.8	Moderate	.28	5	5	0-1
WgB----- Wagram	0-33	1-7	1.60-1.75	6.0-20	0.03-0.07	4.5-6.0	Low-----	.10	5	1	.5-2
	33-80	10-35	1.35-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low-----	.20			0-.5
WhA----- Wahee	0-9	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low-----	.24	5	3	.5-5
	9-44	35-70	1.40-1.60	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	.28			0-.5
	44-80	---	---	---	---	---	-----	---			---

Table 17.—Soil and Water Features

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>	<u>In</u>		
AeB----- Ailey	B	None-----	---	---	>6.0	---	---	0-0	---	Moderate	Moderate
AeC----- Ailey	B	None-----	---	---	>6.0	---	---	0-0	---	Moderate	Moderate
AlB----- Alaga	A	None-----	---	---	4.0-6.0	Apparent	Jan-Mar	0-0	---	Low-----	Moderate
AnA----- Albany	C	None-----	---	---	1.0-2.5	Apparent	Dec-Mar	0-0	---	High-----	High
AuB----- Autryville	A	None-----	---	---	4.0-6.0	Apparent	Jan-Apr	0-0	---	Low-----	High
BaB----- Barnwell	C	None-----	---	---	3.5-5.0	Perched	Nov-Apr	0-0	---	Moderate	High
BaC----- Barnwell	C	None-----	---	---	3.5-5.0	Perched	Nov-Apr	0-0	---	Moderate	High
BeB2----- Barnwell	C	None-----	---	---	3.5-5.0	Perched	Nov-Apr	0-0	---	Moderate	High
BeC2----- Barnwell	C	None-----	---	---	3.5-5.0	Perched	Nov-Apr	0-0	---	Moderate	High
BnA----- Blanton	A	None-----	---	---	4.0-6.0	Perched	Mar-Aug	0-0	---	High-----	High
BnB----- Blanton	A	None-----	---	---	4.0-6.0	Perched	Mar-Aug	0-0	---	High-----	High
BnC----- Blanton	A	None-----	---	---	4.0-6.0	Perched	Mar-Aug	0-0	---	High-----	High
BoA----- Bonneau	A	None-----	---	---	3.5-5.0	Apparent	Dec-Mar	0-0	---	Low-----	High
BoB----- Bonneau	A	None-----	---	---	3.5-5.0	Apparent	Dec-Mar	0-0	---	Low-----	High
ByA----- Byars	D	None-----	---	---	+1-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
CoA----- Coxville	D	None-----	---	---	0-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
EcA----- Echaw	A	None-----	---	---	2.5-5.0	Apparent	Nov-Apr	0-0	---	Low-----	High
EoA----- Elloree	D	Frequent	Long----	Dec-Apr	0-1.0	Apparent	Nov-Apr	0-0	---	High-----	Moderate
EuA----- Eunola	C	None-----	---	---	1.5-2.5	Apparent	Nov-Mar	0-0	---	Low-----	High

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>	<u>In</u>		
FsA: Fluvaquents----	C	Frequent	Brief----	Nov-Apr	0-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
Osier-----	A/D	Frequent	Long----	Dec-Apr	0-0.5	Apparent	Nov-Mar	0-0	---	High-----	High
Grifton-----	D	Frequent	Long----	Jan-Dec	0-1.0	Apparent	Dec-May	0-0	---	High-----	Low
FxB----- Foxworth	A	None-----	---	---	4.0-6.0	Apparent	Jun-Oct	0-0	---	Low-----	Moderate
GoA----- Goldsboro	B	None-----	---	---	2.0-3.0	Apparent	Dec-Apr	0-0	---	Moderate	High
GsA: Grifton-----	D	Frequent	Long----	Jan-Dec	0-1.0	Apparent	Dec-May	0-0	---	High-----	Low
Osier-----	A/D	Frequent	Long----	Dec-Apr	0-0.5	Apparent	Nov-Mar	0-0	---	High-----	High
HbA----- Hobonny	D	Frequent	Long----	Jan-Dec	+1.0-0.0	Apparent	Jan-Dec	4-12	10-29	High-----	High
JnA----- Johns	C	Rare-----	---	---	1.5-3.0	Apparent	Dec-Apr	0-0	---	Moderate	High
JsA----- Johnston	D	Frequent	Long----	Nov-Jul	+1.0-1.5	Apparent	Nov-Jun	0-0	---	High-----	High
LcB----- Lucy	A	None-----	---	---	>6.0	---	---	0-0	---	Low-----	High
LuA----- Lumbee	B/D	Frequent	Long----	Nov-Mar	0-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
LyA----- Lynchburg	C	None-----	---	---	0.5-1.5	Apparent	Nov-Apr	0-0	---	High-----	High
McA----- McColl	D	None-----	---	---	+1-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
MgA----- Meggett	D	Frequent	Long----	Dec-Apr	0-1.0	Apparent	Nov-Apr	0-0	None	High-----	Moderate
NaB----- Nankin	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	High
NaC----- Nankin	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	High
NbB2----- Nankin	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	High
NbC2----- Nankin	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	High
NeB----- Neeses	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	Moderate
NeC----- Neeses	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	Moderate

Table 17.—Soil and Water Features—Continued

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>	<u>In</u>		
NnB2----- Neeses	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	Moderate
NnC2----- Neeses	C	None-----	---	---	>6.0	---	---	0-0	---	High-----	Moderate
NoA----- Noboco	B	None-----	---	---	2.5-4.0	Apparent	Dec-Mar	0-0	---	Moderate	High
NoB----- Noboco	B	None-----	---	---	2.5-4.0	Apparent	Dec-Mar	0-0	---	Moderate	High
NrA----- Norfolk	B	None-----	---	---	4.0-6.0	Apparent	Jan-Mar	0-0	---	Moderate	High
NrB----- Norfolk	B	None-----	---	---	4.0-6.0	Apparent	Jan-Mar	0-0	---	Moderate	High
OcA----- Ocilla	C	None-----	---	---	1.0-2.5	Apparent	Dec-Apr	0-0	---	High-----	Moderate
OgA----- Ogeechee	B/D	None-----	---	---	0-1.0	Apparent	Dec-May	0-0	---	High-----	High
OrA----- Orangeburg	B	None-----	---	---	>6.0	---	---	0-0	---	Moderate	Moderate
OrB----- Orangeburg	B	None-----	---	---	>6.0	---	---	0-0	---	Moderate	Moderate
OsA----- Osier	A/D	Frequent	Long----	Dec-Apr	0-0.5	Apparent	Nov-Mar	0-0	---	High-----	High
PmA----- Plummer	B/D	None-----	---	---	0-1.0	Apparent	Dec-Jul	0-0	---	Moderate	High
RaA----- Rains	B/D	None-----	---	---	0-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
RmA----- Rembert	D	None-----	---	---	+1-1.0	Apparent	Nov-Apr	0-0	---	High-----	High
SeA----- Seagate	A/D	None-----	---	---	1.5-2.5	Apparent	Nov-Apr	0-0	---	High-----	High
TrB----- Troup	A	None-----	---	---	>6.0	---	---	0-0	---	Low-----	Moderate
TrC----- Troup	A	None-----	---	---	>6.0	---	---	0-0	---	Low-----	Moderate
UcB----- Uchee	A	None-----	---	---	3.5-5.0	Perched	Jan-Apr	0-0	---	Low-----	High
UcC----- Uchee	A	None-----	---	---	3.5-5.0	Perched	Jan-Apr	0-0	---	Low-----	High
Ud----- Udorthents	B	None-----	---	---	>6.0	---	---	0-0	---	Moderate	High

Table 17.—Soil and Water Features—Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Ini- tial	Total	Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>	<u>In</u>		
WgB----- Wagram	A	None-----	---	---	>6.0	---	---	0-0	---	Low-----	High
WhA----- Wahee	D	Rare-----	---	---	0.5-1.5	Apparent	Dec-Mar	0-0	---	High-----	High

Table 18.—Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series. Soils are classified according to the 6th edition of the "Keys to Soil Taxonomy," 1994)

Soil name	Family or higher taxonomic class
Ailey-----	Loamy, siliceous, thermic Arenic Kanhapludults
Alaga-----	Thermic, coated Typic Quartzipsamments
Albany-----	Loamy, siliceous, thermic Grossarenic Paleudults
Autryville-----	Loamy, siliceous, thermic Arenic Paleudults
Barnwell-----	Fine-loamy, siliceous, thermic Typic Kanhapludults
*Blanton-----	Loamy, siliceous, thermic Grossarenic Paleudults
*Bonneau-----	Loamy, siliceous, thermic Arenic Paleudults
Byars-----	Fine, kaolinitic, thermic Umbric Paleaquults
Coxville-----	Fine, kaolinitic, thermic Typic Paleaquults
Echaw-----	Sandy, siliceous, thermic Oxyaquic Alorthods
Elloree-----	Loamy, siliceous, thermic Arenic Endoaqualfs
Eunola-----	Fine-loamy, siliceous, thermic Aquic Hapludults
Fluvaquents-----	Fluvaquents
Foxworth-----	Thermic, coated Typic Quartzipsamments
Goldsboro-----	Fine-loamy, siliceous, thermic Aquic Paleudults
Grifton-----	Fine-loamy, siliceous, thermic Typic Endoaqualfs
Hobonny-----	Euic, thermic Typic Medisapristis
Johns-----	Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Aquic Hapludults
Johnston-----	Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts
Lucy-----	Loamy, siliceous, thermic Arenic Kandiodults
Lumbee-----	Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Typic Endoaquults
Lynchburg-----	Fine-loamy, siliceous, thermic Aeris Paleaquults
McColl-----	Fine, kaolinitic, thermic Typic Epiaquults
Meggett-----	Fine, mixed, active, thermic Typic Albaqualfs
Nankin-----	Fine, kaolinitic, thermic Typic Kanhapludults
Neeses-----	Fine, kaolinitic, thermic Typic Hapludults
Noboco-----	Fine-loamy, siliceous, thermic Typic Paleudults
Norfolk-----	Fine-loamy, siliceous, thermic Typic Kandiodults
Ocilla-----	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ogeechee-----	Fine-loamy, siliceous, thermic Typic Endoaquults
Orangeburg-----	Fine-loamy, siliceous, thermic Typic Kandiodults
Osier-----	Siliceous, thermic Typic Psammaquents
*Plummer-----	Loamy, siliceous, thermic Grossarenic Paleaquults
Rains-----	Fine-loamy, siliceous, thermic Typic Paleaquults
Rembert-----	Fine, kaolinitic, thermic Typic Endoaquults
Seagate-----	Sandy over loamy, siliceous, thermic Ultic Haplohumods
Troup-----	Loamy, siliceous, thermic Grossarenic Kandiodults
Uchee-----	Loamy, siliceous, thermic Arenic Hapludults
Udorthents-----	Udorthents
Wagram-----	Loamy, siliceous, thermic Arenic Kandiodults
Wahee-----	Fine, mixed, thermic Aeris Endoaquults

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Join sheet 1,
Norway West

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BAMBERG COUNTY, SOUTH CAROLINA
BAMBERG QUADRANGLE
SHEET NUMBER 4 OF 13

Joins sheet 2, Norway East

Join sheet 3, Denmark

Join sheet 5, Midway

Join sheet 7,
Clear

Join sheet 9,
Tony Hill Bay

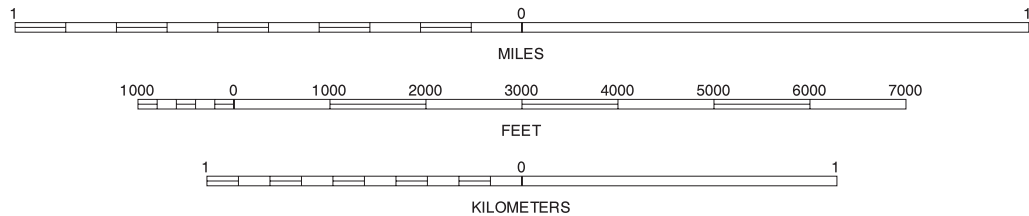
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1989-1991 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



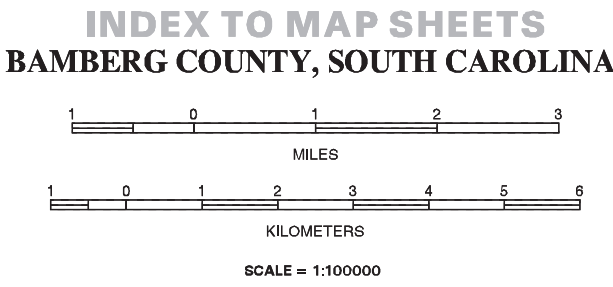
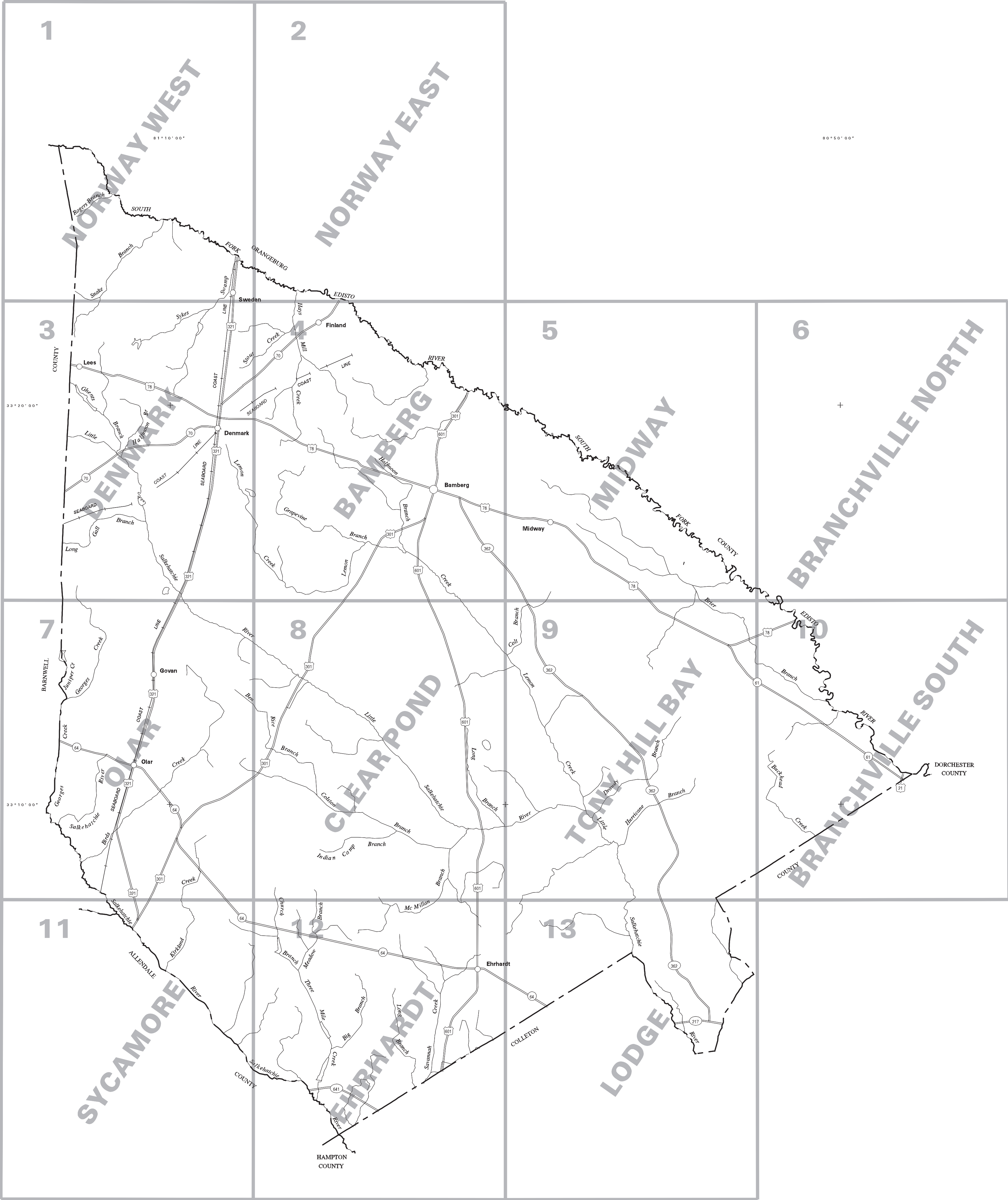
1	2	
3		5
7	8	9

INDEX TO ADJOINING 7.5 MAPS

- 1 NORWAY WEST
- 2 NORWAY EAST
- 3 DENMARK
- 5 MIDWAY
- 7 CLEAR
- 8 CLEAR POND
- 9 TONY HILL BAY

BAMBERG, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 13

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.

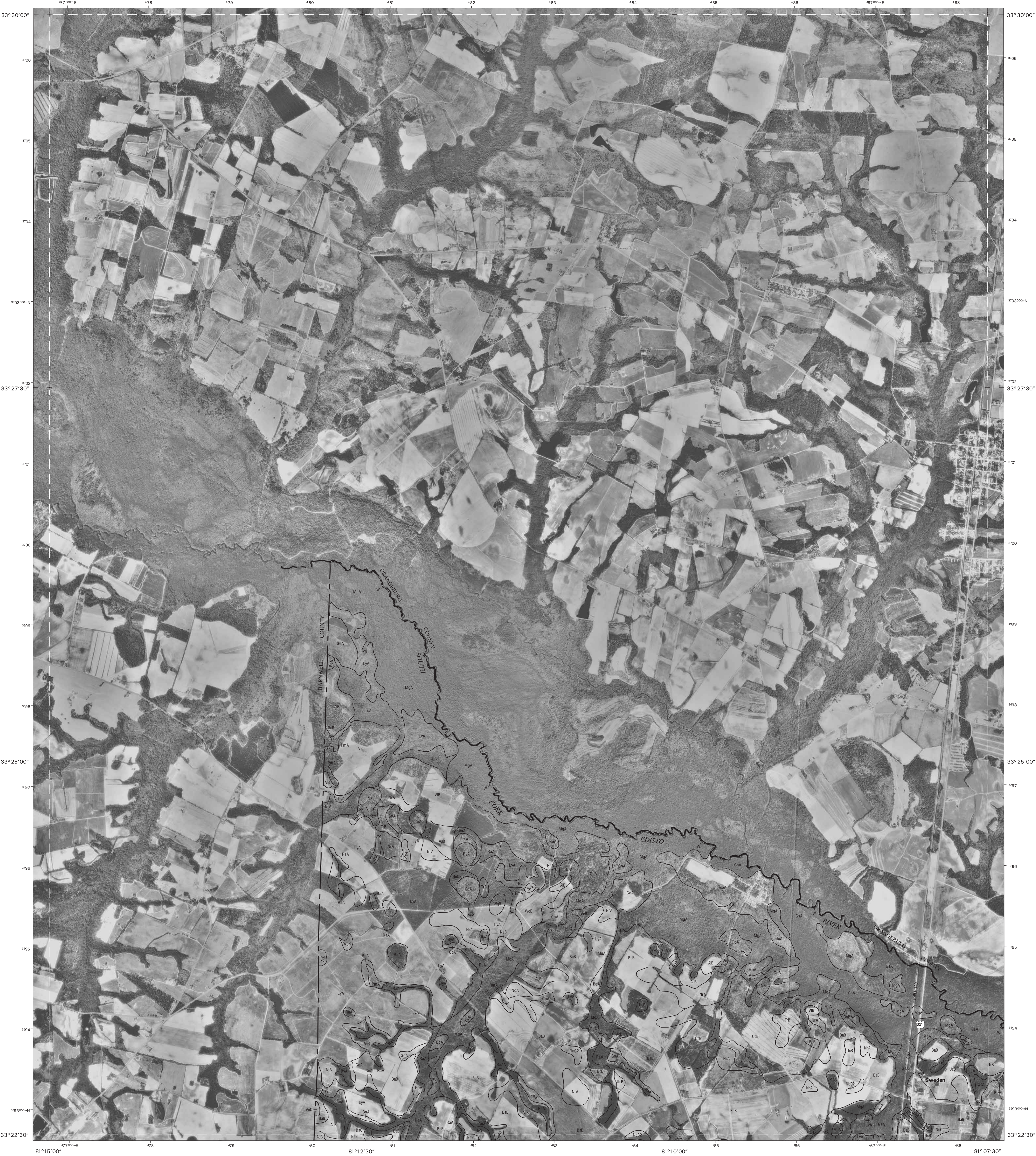


SOIL LEGEND

SYMBOL	NAME
AeB	Ailey coarse sand, 2 to 6 percent slopes
AeC	Ailey coarse sand, 6 to 10 percent slopes
AlB	Alaga coarse sand, 0 to 6 percent slopes
AnA	Albany sand, 0 to 2 percent slopes
AuB	Autryville sand, 0 to 6 percent slopes
BaB	Barnwell loamy sand, 2 to 6 percent slopes
BaC	Barnwell loamy sand, 6 to 10 percent slopes
BeB2	Barnwell sandy loam, 2 to 6 percent slopes, eroded
BeC2	Barnwell sandy loam, 6 to 10 percent slopes, eroded
BnA	Blanton sand, 0 to 2 percent slopes
BnB	Blanton sand, 2 to 6 percent slopes
BnC	Blanton sand, 6 to 10 percent slopes
BoA	Bonneau sand, 0 to 2 percent slopes
BoB	Bonneau sand, 2 to 6 percent slopes
ByA	Byars loam, 0 to 2 percent slopes
CoA	Coxville fine sandy loam, 0 to 2 percent slopes
EcA	Echaw fine sand, 0 to 2 percent slopes
EoA	Ellore loamy sand, 0 to 2 percent slopes, frequently flooded
EuA	Eunola fine sandy loam, 0 to 2 percent slopes
FsA	Fluvaquents-Osier-Grifton complex, 0 to 2 percent slopes, frequently flooded
FxB	Foxworth sand, 0 to 6 percent slopes
GoA	Goldsboro loamy sand, 0 to 2 percent slopes
GsA	Grifton-Osier complex, 0 to 2 percent slopes, frequently flooded
HbA	Hobonny muck, 0 to 1 percent slopes, occasionally flooded
JnA	Johns fine sandy loam, 0 to 2 percent slopes
JsA	Johnston sandy loam, 0 to 2 percent slopes, frequently flooded
LcB	Lucy sand, 0 to 6 percent slopes
LuA	Lumbee loam, 0 to 2 percent slopes, frequently flooded
LyA	Lynchburg fine sandy loam, 0 to 2 percent slopes
McA	McColl loam, 0 to 2 percent slopes
MgA	Meggett fine sandy loam, 0 to 2 percent slopes, frequently flooded
NaB	Nankin loamy sand, 2 to 6 percent slopes
NaC	Nankin loamy sand, 6 to 10 percent slopes
NbB2	Nankin sandy loam, 2 to 6 percent slopes, eroded
NbC2	Nankin sandy loam, 6 to 10 percent slopes, eroded
NeB	Neeses loamy sand, 2 to 6 percent slopes
NeC	Neeses loamy sand, 6 to 10 percent slopes
NnB2	Neeses sandy loam, 2 to 6 percent slopes, eroded
NnC2	Neeses sandy loam, 6 to 10 percent slopes, eroded
NoA	Noboco fine sand, 0 to 2 percent slopes
NoB	Noboco fine sand, 2 to 6 percent slopes
NrA	Norfolk sand, 0 to 2 percent slopes
NrB	Norfolk sand, 2 to 6 percent slopes
OcA	Ocilla sand, 0 to 3 percent slopes
OgA	Ogeechee loamy sand, 0 to 2 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes
OsA	Osier loamy sand, 0 to 2 percent slopes, frequently flooded
PmA	Plummer loamy sand, 0 to 2 percent slopes
RaA	Rains fine sandy loam, 0 to 2 percent slopes
RmA	Rembert sandy loam, 0 to 2 percent slopes
SeA	Seagate sand, 0 to 2 percent slopes
TrB	Troup sand, 0 to 6 percent slopes
TrC	Troup sand, 6 to 10 percent slopes
UcB	Uchee sand, 2 to 6 percent slopes
UcC	Uchee sand, 6 to 10 percent slopes
Ud	Udorthents
W	Water
WgB	Wagram sand, 2 to 6 percent slopes
WhA	Wahee loamy sand, 0 to 2 percent slopes

CONVENTIONAL AND SPECIAL
SYMBOLS LEGEND

SOIL SURVEY FEATURES	CULTURAL FEATURES	HYDROGRAPHIC FEATURES
SOIL DELINEATIONS AND SYMBOLS	BOUNDARIES	STREAMS
MISCELLANEOUS LANDFORM FEATURES	County or parish	Unclassified stream
Wet spot	TRANSPORTATION	Label only
	ROAD EMBLEM & DESIGNATIONS	
	Federal	
	State	
	RAILROAD	Label only



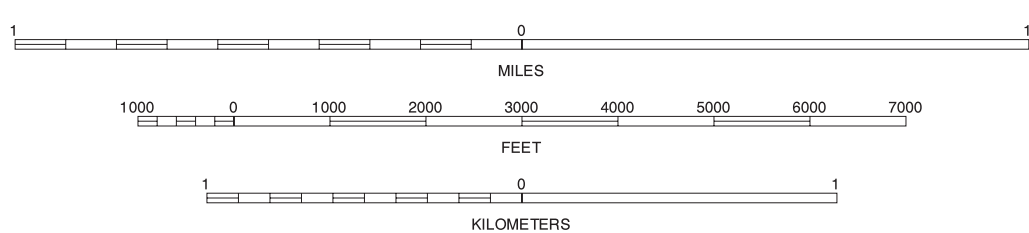
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



		2	2 NORWAY EAST
3	4	3 DENMARK	4 BAMBERG

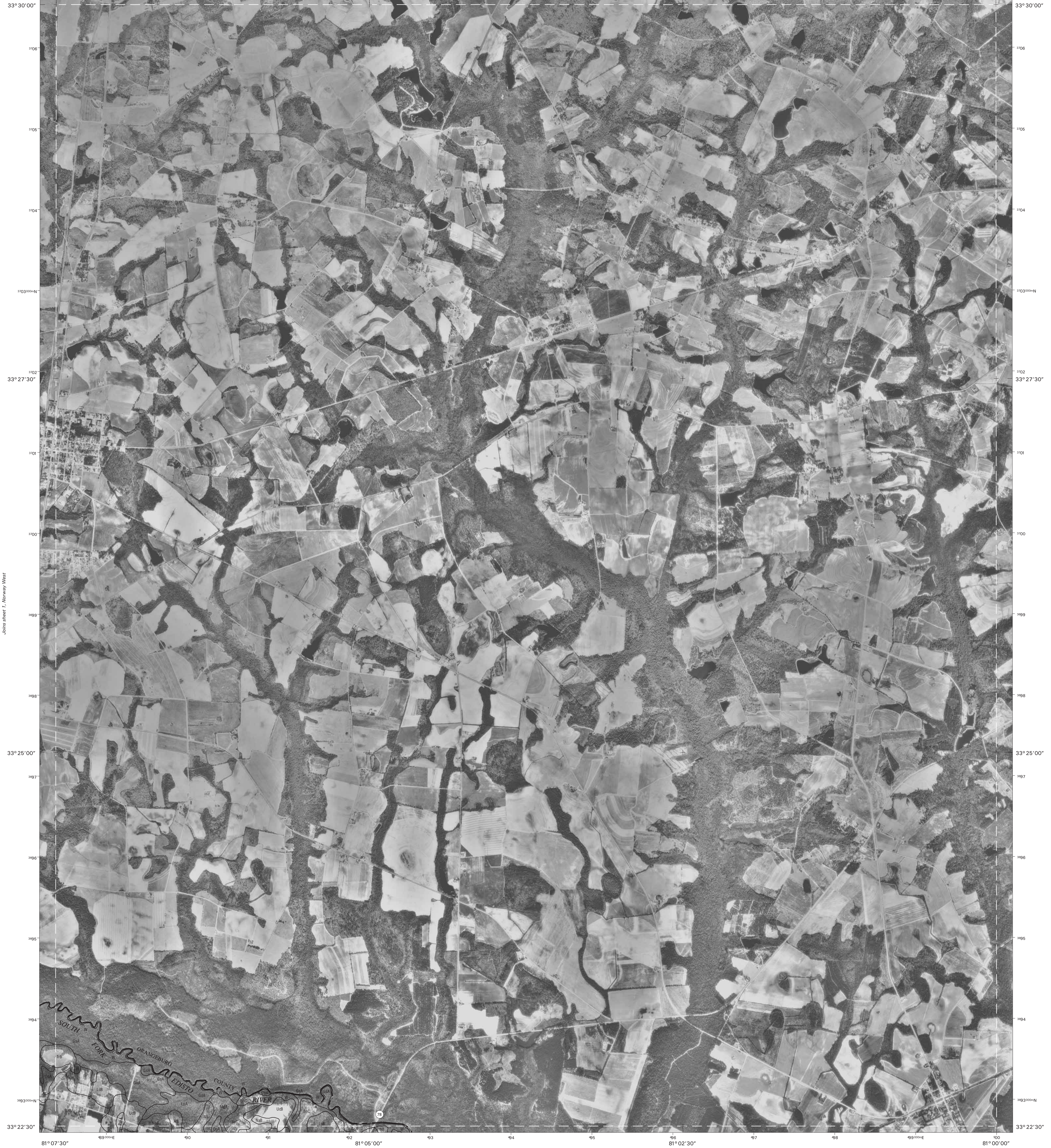
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NORWAY WEST, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 13

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.

Joins sheet 2, Norway East

Joins sheet 4, Bamberg



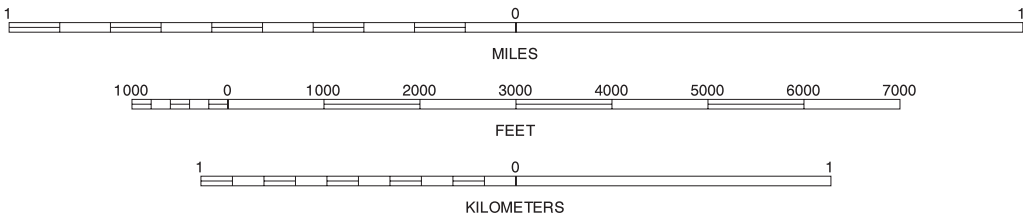
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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



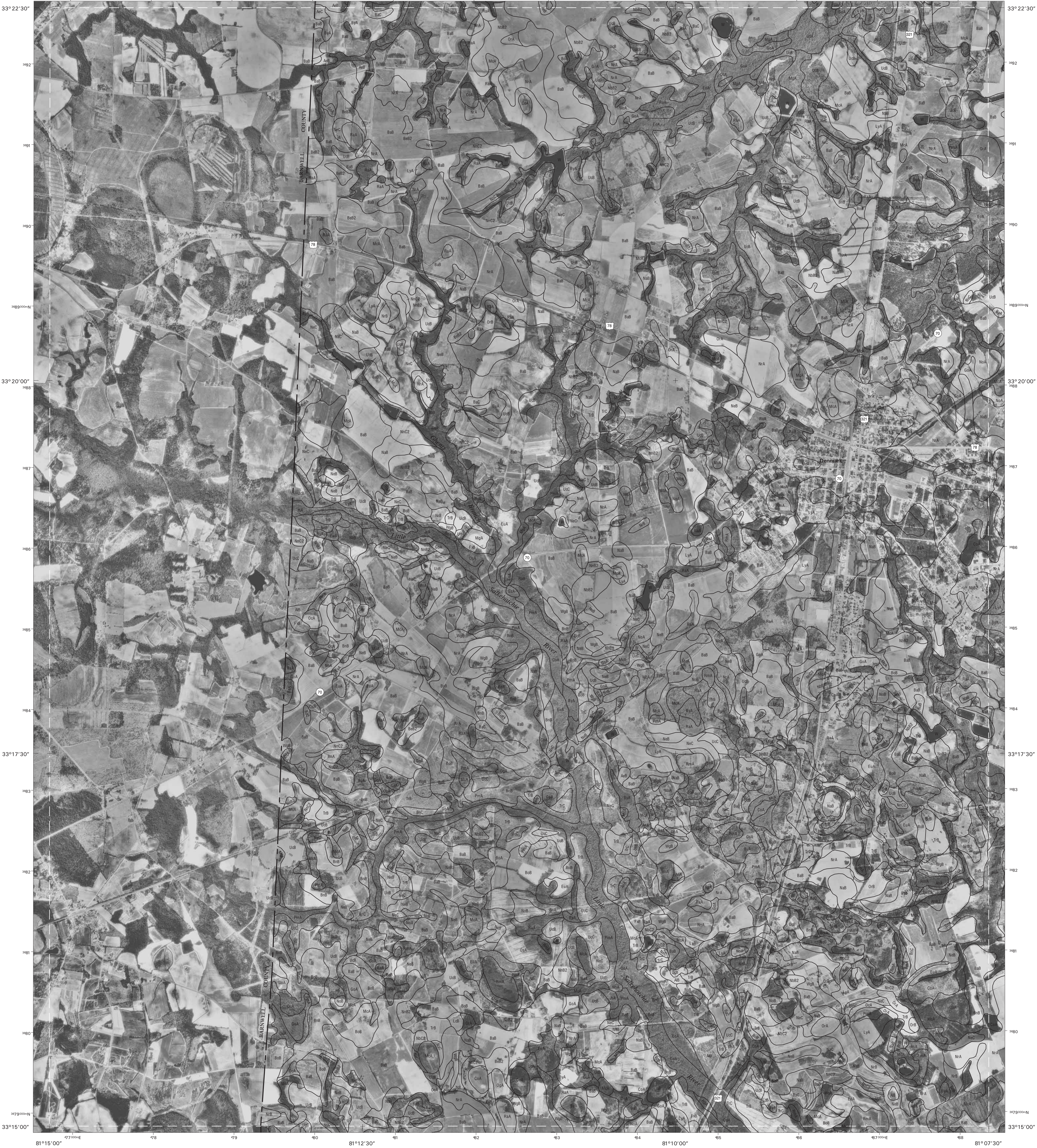
1	2	3
3	4	5

INDEX TO ADJOINING 7.5 MAPS

1	NORWAY WEST
3	DENMARK
4	BAMBERG
5	MIDWAY

NORWAY EAST, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 13

Soil map delineations extending beyond the dashed white quadrangle nealtine are for reference only and are included on adjacent map sheets.

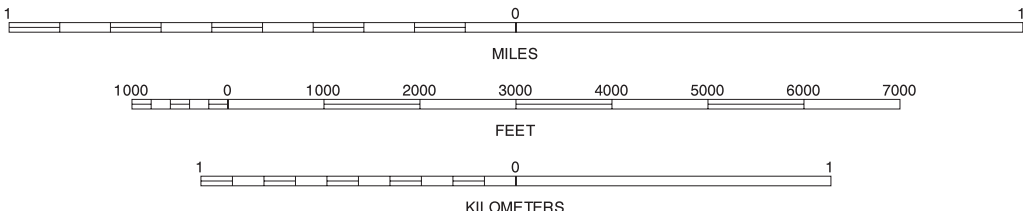


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QUADRANGLE LOCATION



SCALE 1:24000

	1	2
		4
7	8	

1 NORWAY WEST
2 NORWAY EAST
4 BAMBERG
7 CLAR
8 CLEAR POND
INDEX TO ADJOINING 7.5 MAPS

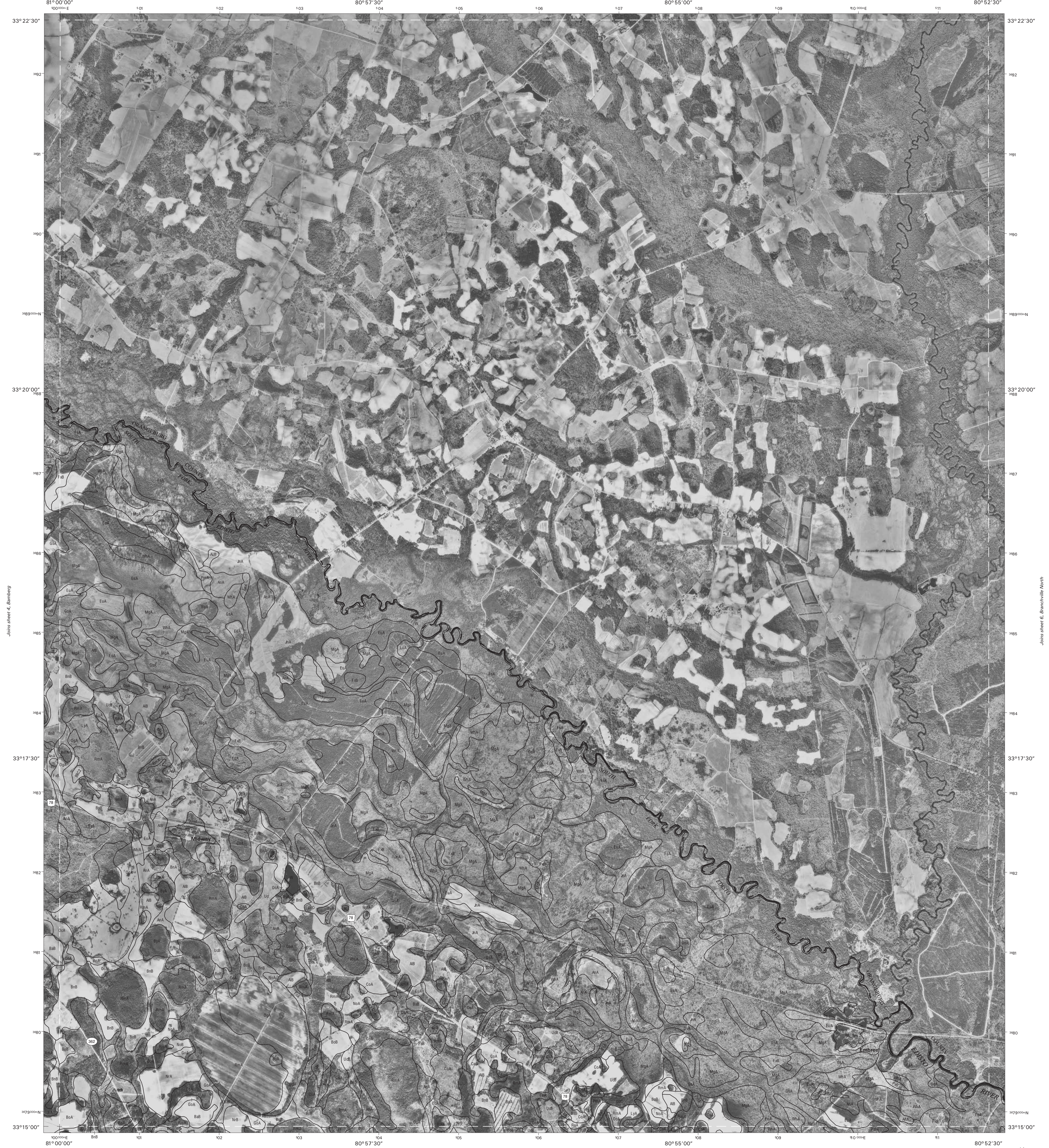
DENMARK, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 13

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

Joins sheet 2,
Norfolk East

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BAMBERG COUNTY, SOUTH CAROLINA
MIDWAY QUADRANGLE
SHEET NUMBER 5 OF 13



Joins sheet 8,
Clear Pond

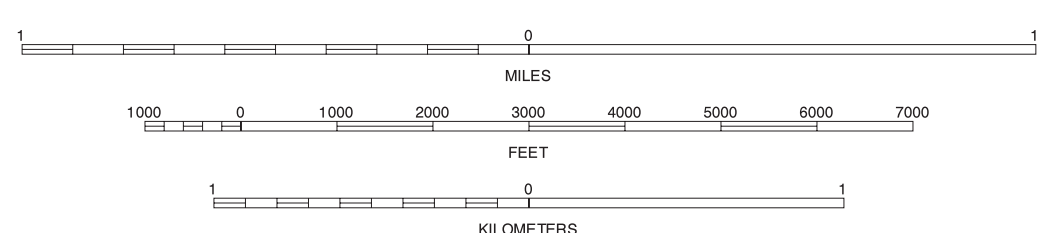
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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 17.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION



2			2 NORWAY EAST
4		6	4 BAMBERG
			6 BRANCHVILLE NORTH
8	9	10	8 CLEAR POND
			9 TONY HILL BAY
			10 BRANCHVILLE SOUTH

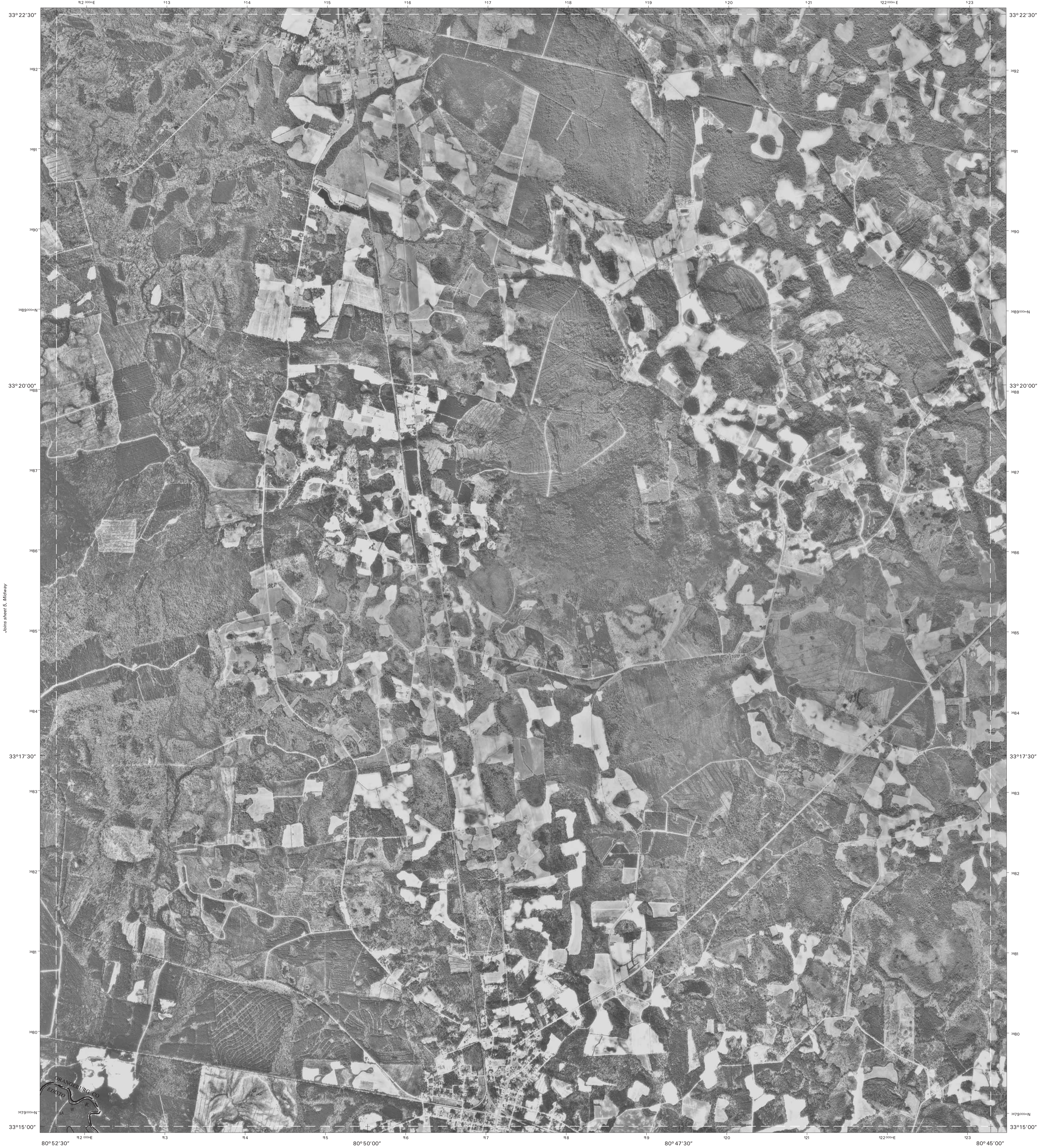
INDEX TO ADJOINING 7.5 MAPS

MIDWAY, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 13

Soil map delineations extending beyond the dashed white quadrangle headline are for reference only and are included on adjacent map sheets.

Joins sheet 6, Branchville North

Joins sheet 10,
Branchville South



Join sheet 9,
Tony Hill Bay

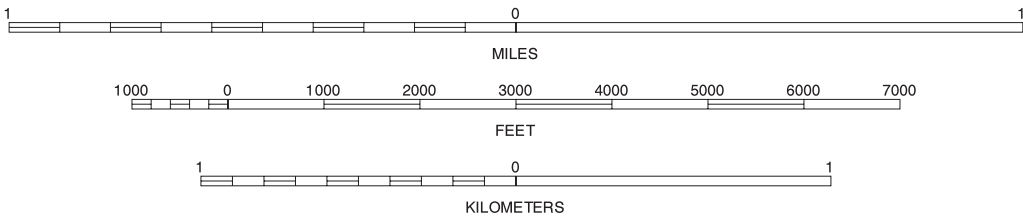
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NORTH



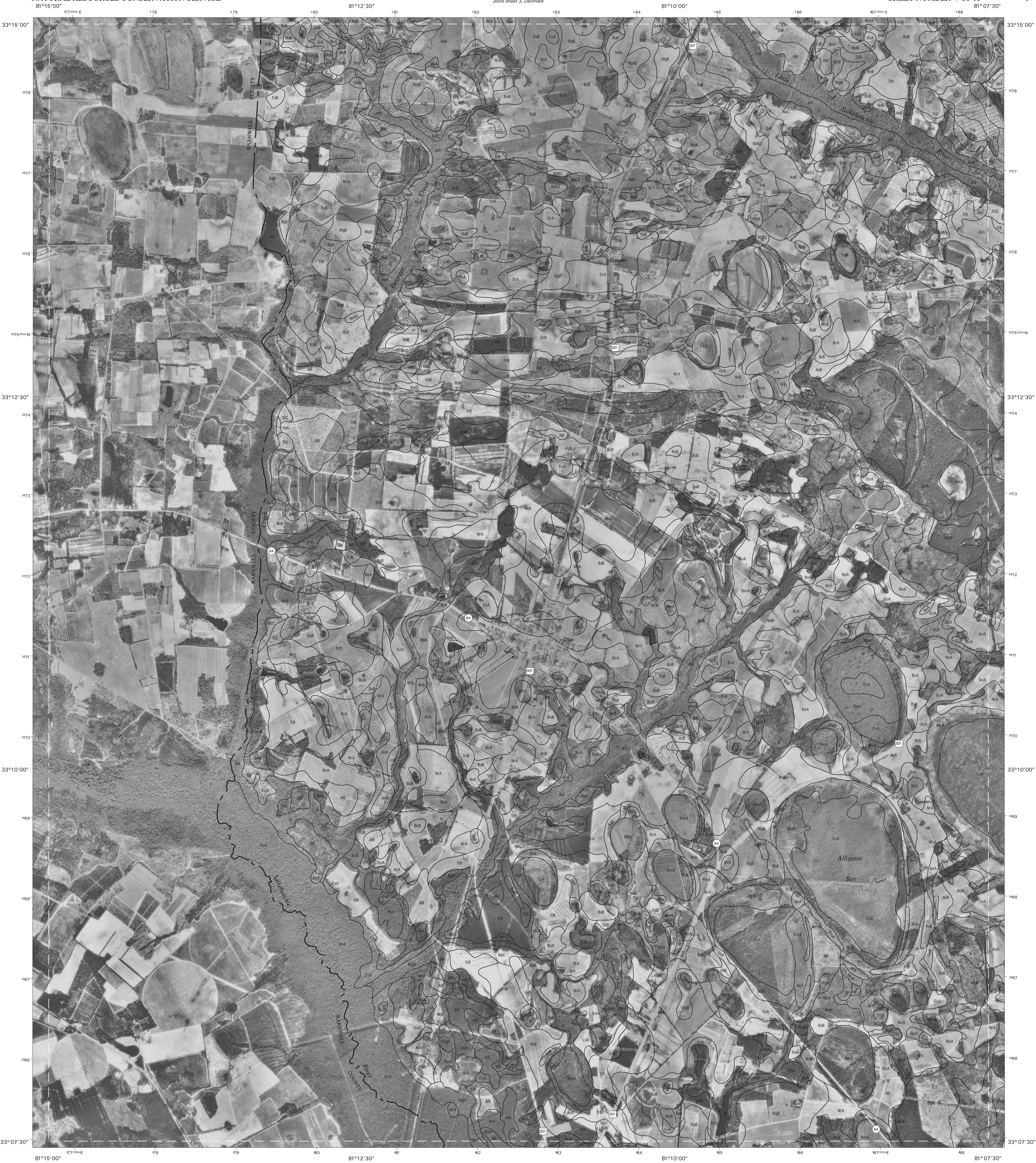
QUADRANGLE LOCATION



5		5 MIDWAY
9	10	9 TONY HILL BAY 10 BRANCHVILLE SOUTH

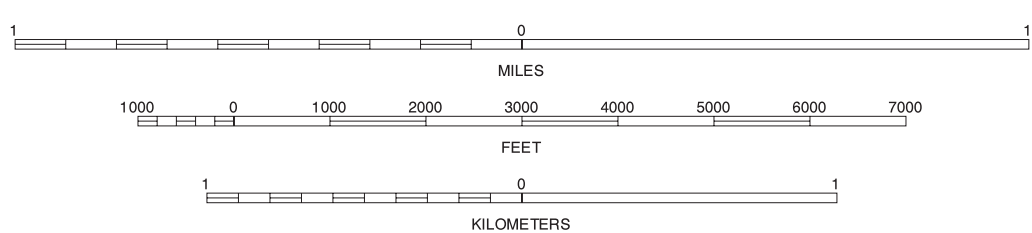
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3	4	3 DENMARK
8	8	4 BAMBERG
11	12	8 CLEAR POND
		11 SYCAMORE
		12 EHRHARDT

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OLAR, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 13

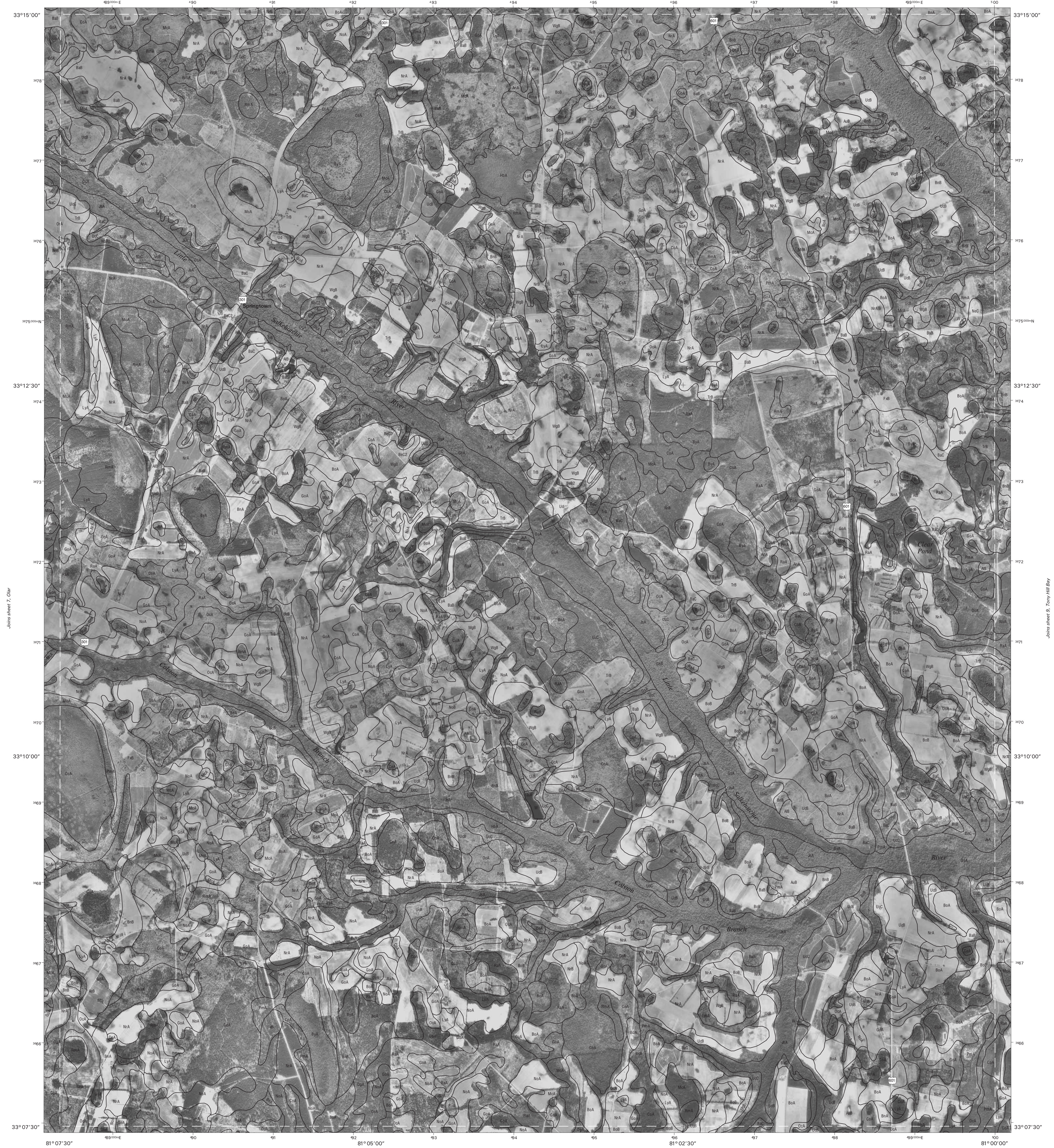
Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

Joins sheet 3,
Dunkley

UNITED STATES
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NATURAL RESOURCES CONSERVATION SERVICE
81° 07' 30"

BAMBERG COUNTY, SOUTH CAROLINA
CLEAR POND QUADRANGLE
SHEET NUMBER 8 OF 13

Joins sheet 5,
Murphy



Joins sheet 7, Oler

Joins sheet 9, Tony Hill Bay

Joins sheet 11,
Sylvanore

Joins sheet 13,
Lodge

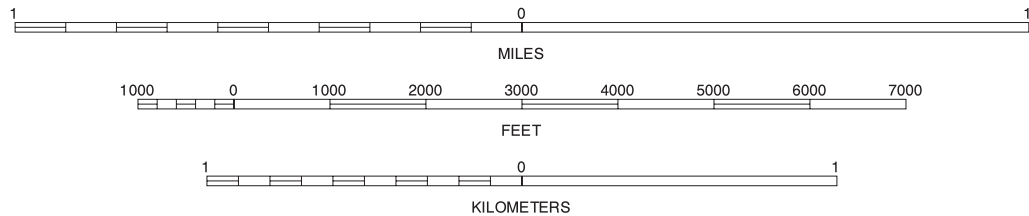
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North American Datum of 1983 (NAD83), GRS-80 Spheroid
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NORTH



QUADRANGLE LOCATION



SCALE 1:24000

3	4	5
7		9
11	12	13

3 DENMARK
4 BAMBERG
5 MIDWAY
7 OLAR
9 TONY HILL BAY
11 SYCAMORE
12 EHRLHARDT
13 LODGE

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CLEAR POND, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 13

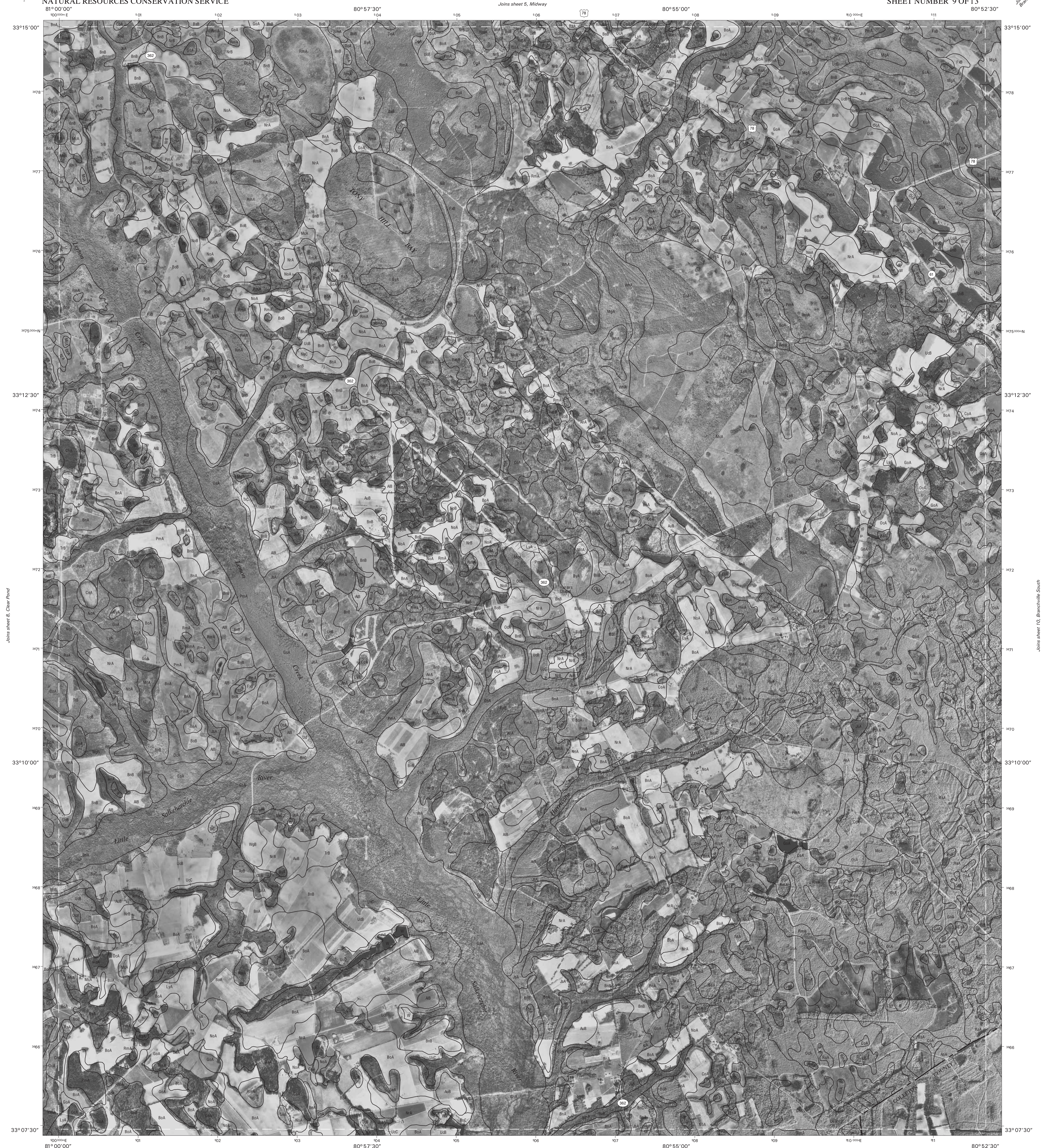
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Joins sheet 4,
Bamberg

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BAMBERG COUNTY, SOUTH CAROLINA
TONY HILL BAY QUADRANGLE
SHEET NUMBER 9 OF 13

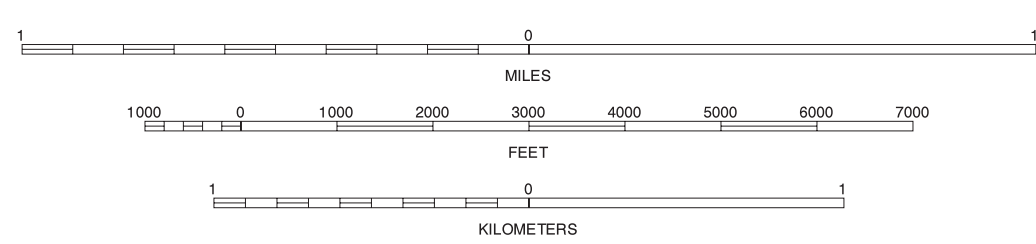
Joins sheet 6,
Branchville North



Joins sheet 12,
Branchville

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4	5	6
8		10
12	13	14

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TONY HILL BAY, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 13

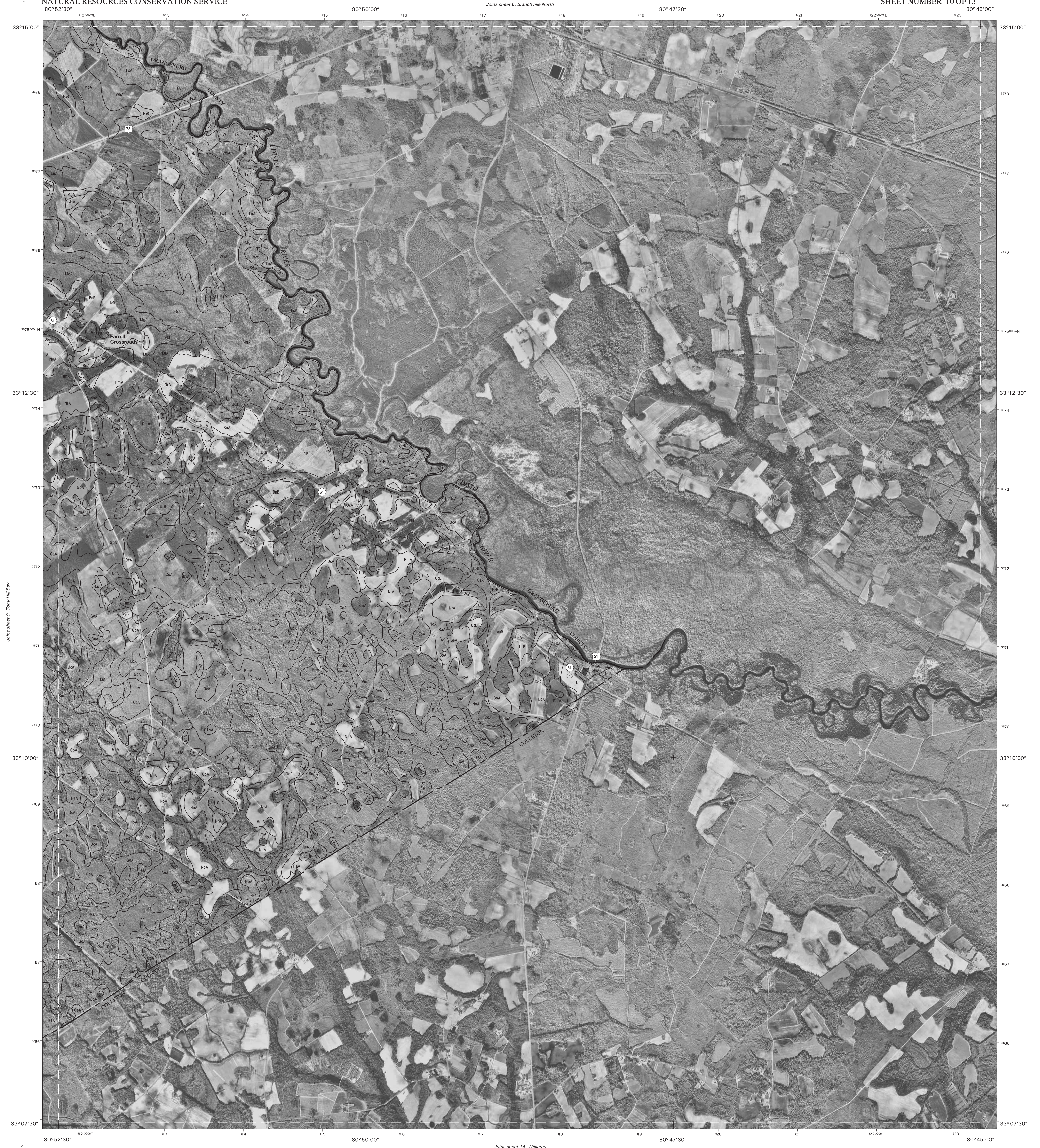
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Joins sheet 14,
Williams

Joins sheet 5,
Midway

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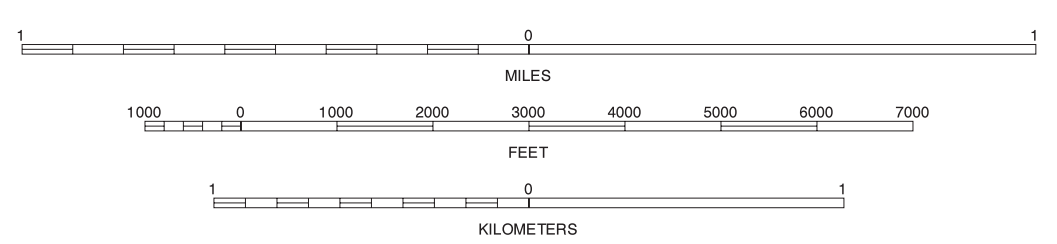
BAMBERG COUNTY, SOUTH CAROLINA
BRANCHVILLE SOUTH QUADRANGLE
SHEET NUMBER 10 OF 13



Joins sheet 13,
Lodge

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

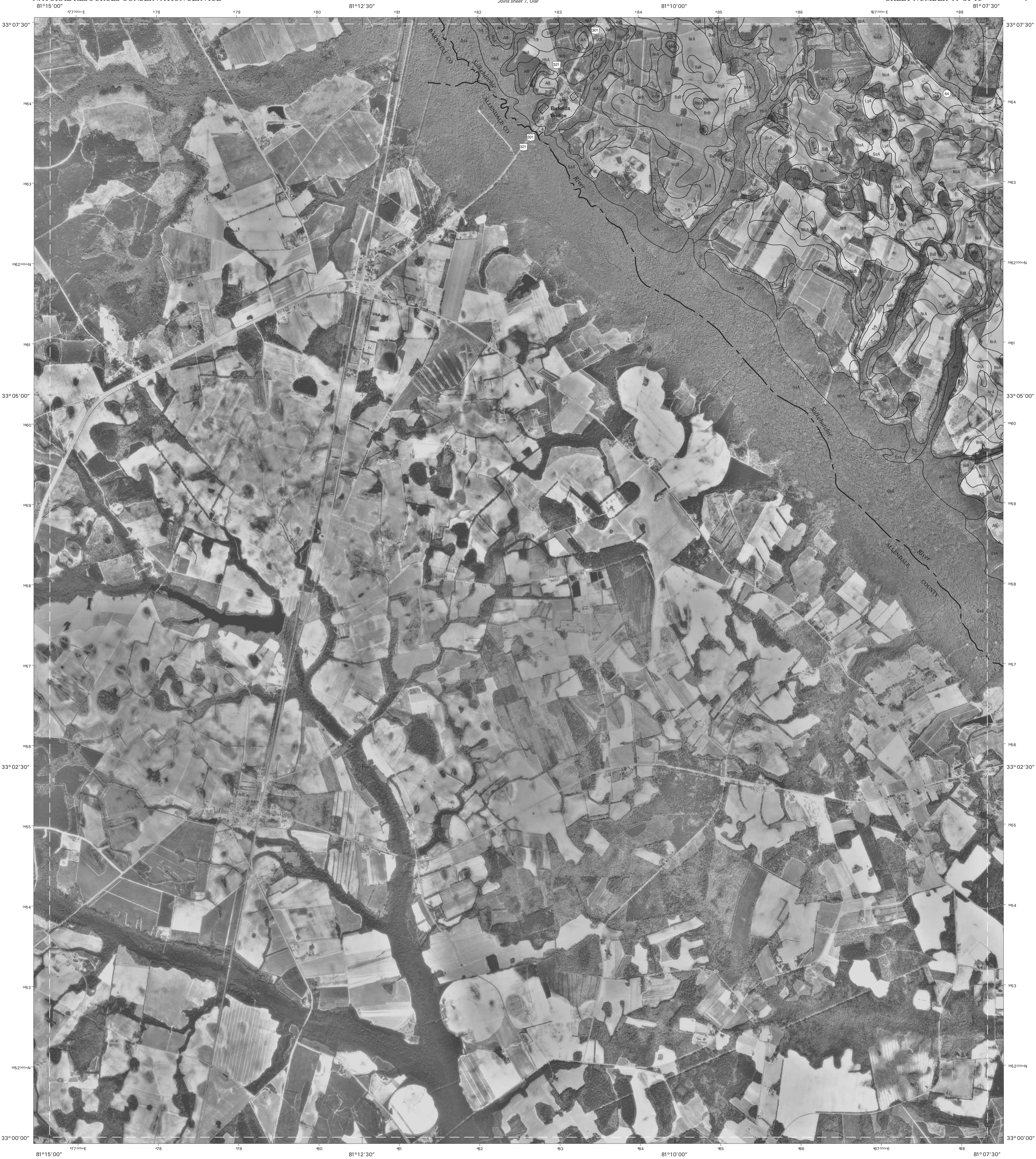


5	6	5 MIDWAY 6 BRANCHVILLE NORTH
9		9 TONY HILL BAY
13	14	13 LODGE 14 WILLIAMS

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BRANCHVILLE SOUTH, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 13

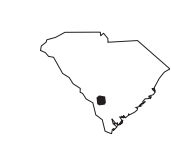
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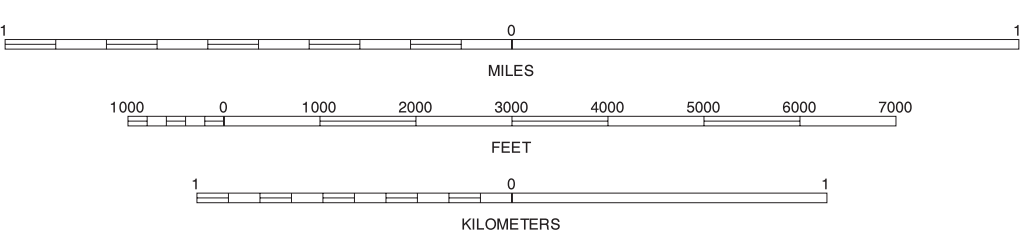
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NORTH



QUADRANGLE LOCATION

SCALE 1:24000



	7	8
		12

7 OLAR
8 CLEAR POND
12 EHRHARDT

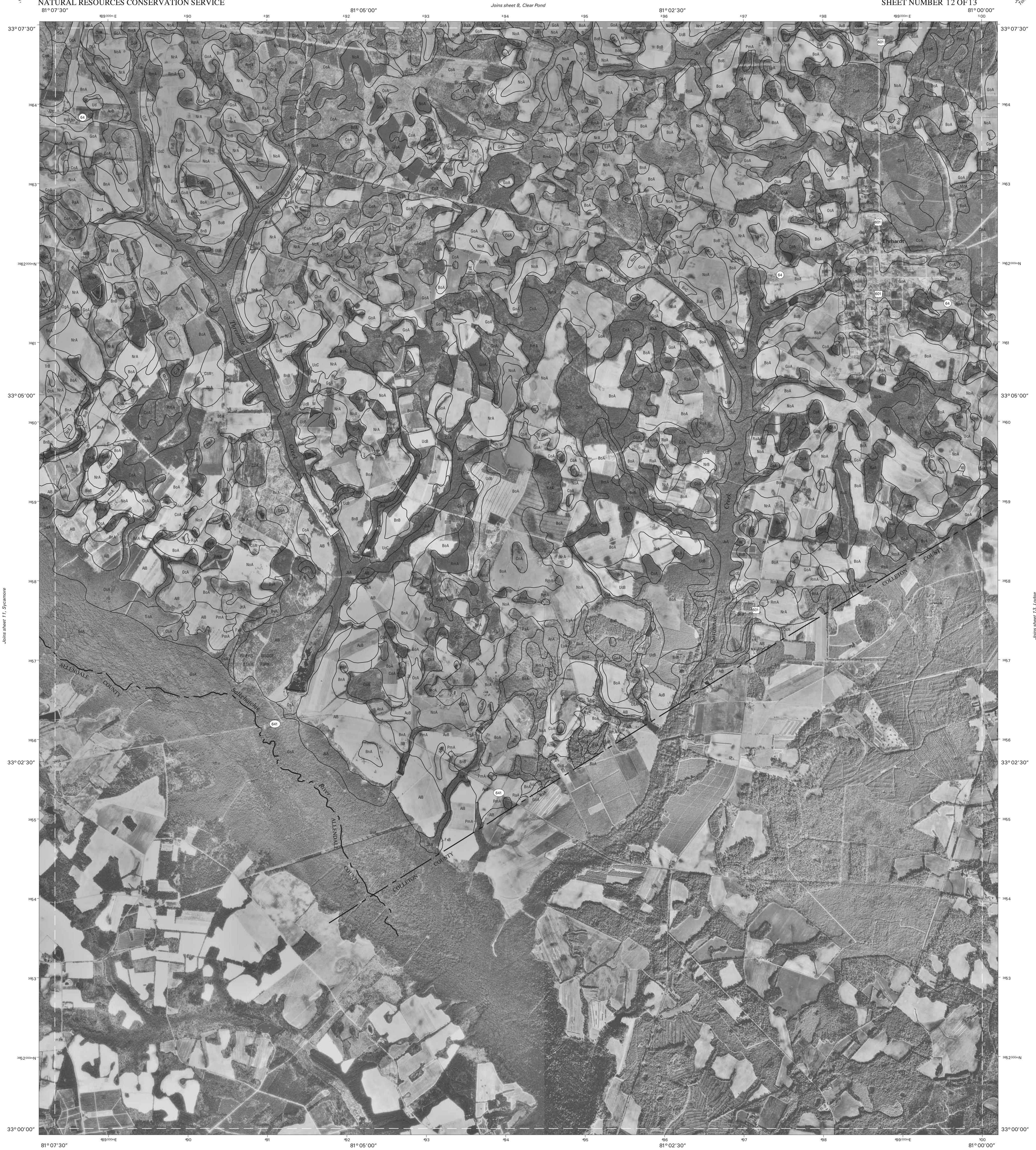
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SYCAMORE, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 13

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.

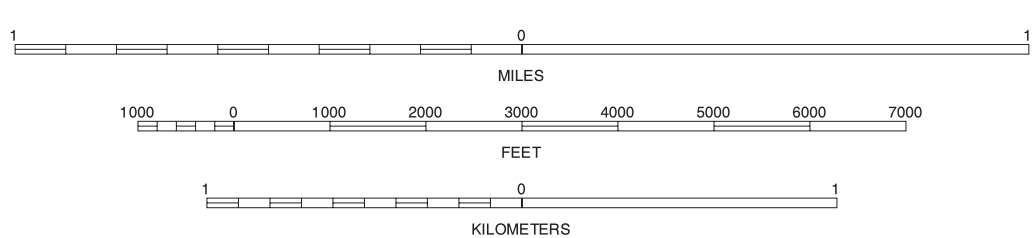
Joins sheet 7,
Oak

Joins sheet 9,
Tony Hill Bay



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7	8	9	7 CLAR
			8 CLEAR POND
			9 TONY HILL BAY
11		13	11 SYCAMORE
			13 LODGE

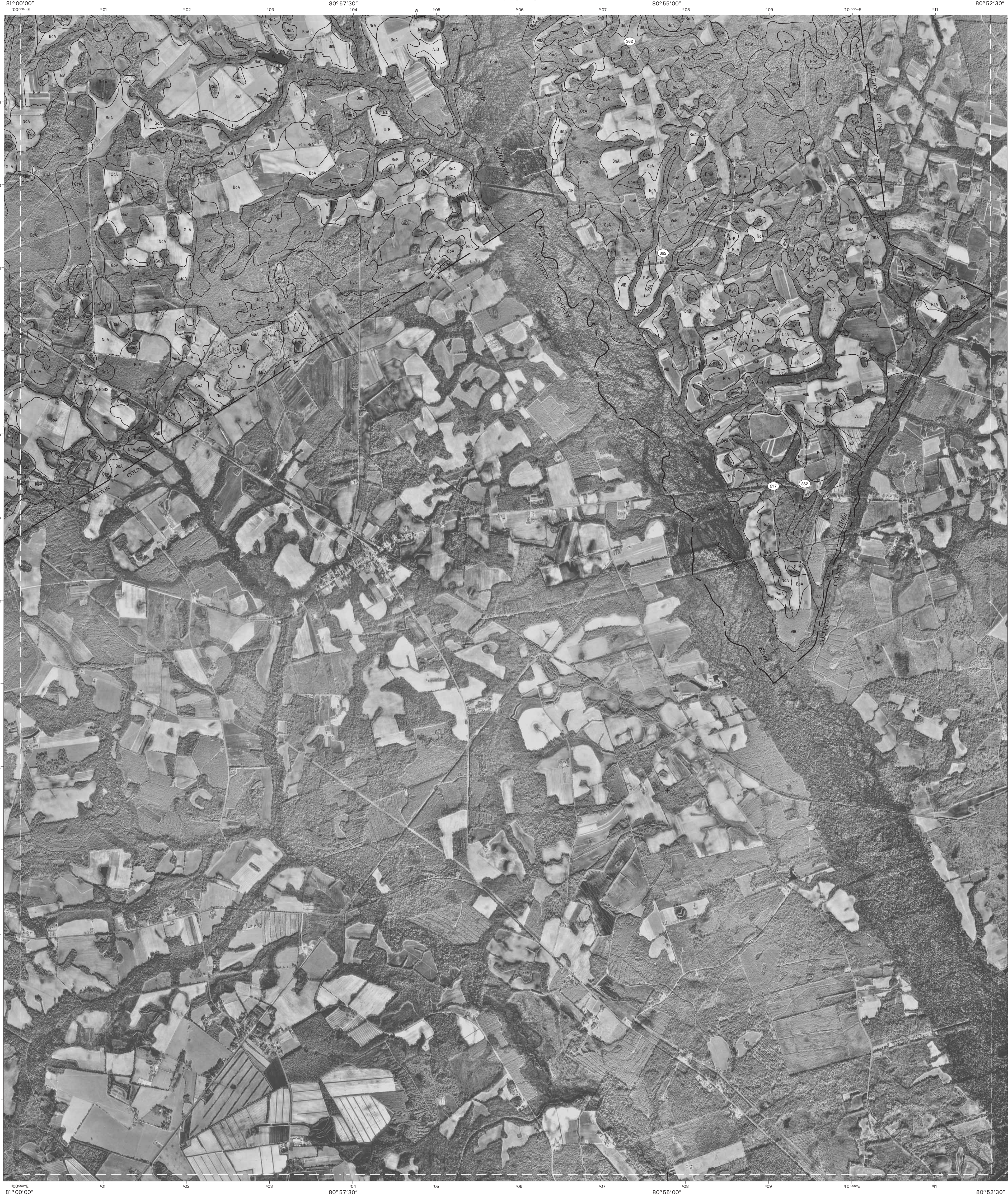
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EHRHARDT, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 13

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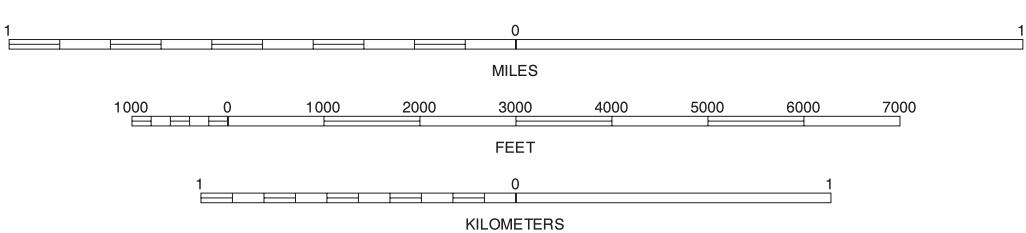
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NATURAL RESOURCES CONSERVATION SERVICE

BAMBERG COUNTY, SOUTH CAROLINA
LODGE QUADRANGLE
SHEET NUMBER 13 OF 13



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8	9	10	8 CLEAR POND 9 TONY HILL BAY 10 BRANCHVILLE SOUTH
12	13	14	12 EHRHARDT 14 WILLIAMS
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LODGE, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 13

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